COMPENDIUM OF RESEARCH 2001 & 2002

SOCIAL, ECONOMIC AND TECHNICAL RESEARCH

CMHC SCHL

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COMPENDIUM
OF
RESEARCH 2001 & 2002

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INTRODUCTION

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Canada Mortgage and Housing Corporation, the federal Government's housing agency, is responsible for administering the National Housing Act.

This legislation is designed to aid in the improvement of housing and living conditions in Canada. As a result, the Corporation has interests in all aspects of housing and urban growth and development.

Under Part IX of this Act, the Government of Canada provides funds to CMHC to conduct research into the social, economic and technical aspects of housing and related fields, and to undertake the publishing and distribution of the results of this research. CMHC therefore has a statutory responsibility to make widely available, information which may be useful in the improvement of housing and living conditions.

This Compendium of Research has been compiled to publicize and increase access to the research reports produced under research programs sponsored by the Corporation during 2001 and 2002. A few reports not included in the earlier compendiums have also been added.

ARRANGEMENT

The abstracts of completed research reports and publications are arranged by broad subject areas. A title index can be found at the end of the Compendium.

AVAILABILITY OF REPORTS

Most research reports are available from the Canadian Housing Information Centre.

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BUILDING COMMUNITIES: FIRST NATIONS BEST PRACTICES FOR HEALTHY HOUSING AND SUSTAINABLE COMMUNITY DEVELOPMENT

This publication focuses on proven alternative construction methods, materials and approaches to achieve sustainable Healthy Housing and community development. "Building Communities" outlines and explains new and efficient:

- Construction methods and materials.
- Cutting-edge technologies in electrical co-generation systems.
- Natural, or biological, sewage and waste water treatment systems.
- Alternative heat generation systems
- Innovative transportation systems that could reduce some of the problems providing construction products and materials to remote and fly-in communities.

"Building Communities" outlines the importance of planning to create an integrated approach to Healthy Housing and community and economic development. It illustrates and explains some examples of Healthy Housing systems. It gives the principles that CMHC uses for Healthy Housing and Community development. It uses as examples:

- CMHC's Healthy House in Toronto.
- The Eagle Lake First Nation Northern Healthy House.
- The Roseau River First Nation Healthy House.
- The Mohawks of the Bay of Quinte R-2000 Homes
- The Mohawk Community of Kahnawake proposed Healthy House and the community's long-term sustainable development planning strategy.
- The EcoNomadTM self-contaminated utilities unit.

Prepared by Morgan Green, Onkwehonwene Anishinabek Sustainable Integrated Systems. CMHC Project Officer: Alain Croteau. Ottawa: Canada Mortgage and Housing Corporation, c2001. 56 pages

Note: Aussi disponible en français sous le titre : Bâtissons ensemble : meilleures pratiques autochtones d'établissement de maisons saines et de collectivités durables

AVAILABILITY : CMHC Information Products *Order number: 62317*

COMMUNICATIONS & INFORMATION TRANSFER STRATEGY FOR ABORIGINAL GROUPS

The goal of this project was to develop a communications and information transfer strategy that will help CMHC in its interactions with Aboriginal housing groups regarding capacity development, research and information transfer activities. To be effective, information has to reach the audience that matters and be in formats that have the maximum impact.

The study looked at the barriers to finding and using housing related information, what makes housing related information relevant, what are key influences, and how effective are the available communications vehicles and distribution channels, all in regard to Aboriginal audiences.

The project consisted of: an assessment of existing communication strategies and marketing research in the area of housing information and training; personal or telephone interviews with senior officials of key national and provincial stakeholder groups; group discussions with a broad range of the key client groups as defined in target audiences; and development of alternative communications and information transfer strategies for CMHC and assessment of their relative costs.

The target audience for this project is made up of: key decision makers in housing operations and policies, provincial organizations chosen to give regional coverage, major national organizations, and regional CMHC program officers.

The geographic coverage is Canada wide. All types of Aboriginal community, on or off-reserve in rural, remote and urban communities are included.

Prepared by Poirier Communications. Prepared for Canada Mortgage and Housing Corporation. CMHC Project Officer: Philip Deacon . S. L: Poirier Communications, 2000.
2 volumes: vol. 1 Final Report (130 pages); vol. 2: Dialogue Circle Transcripts (85 pages)

AVAILABILITY : On an Interlibrary Loan basis from: Canadian Housing Information Centre

COST-EFFECTIVE INDOOR AIR QUALITY AND ENERGY EFFICIENCY RECOMMENDATIONS FOR FIRST NATIONS HOUSING

The purpose of this research project was:

- to prove that less capital investment in First Nations housing but acceptance of higher costs incurred over the life cycle of a house is not cost-effective;
- to demonstrate the potential for cost-effective, improved housing in First Nations communities; and
- to demonstrate the value of investigations according to the CMHC Indoor Air Quality Investigative Protocol and the Energuide for Houses Evaluation Protocol as repeatable, effective renovation planning methods that could be implemented by First Nations technical service providers.

Indoor air quality investigations and house energy efficiency evaluations, according to the recognized protocols noted above, were conducted on five sample houses volunteered by the Washagamis Bay Fist Nation. The research found that the sample of First Nations houses that were investigated were built with low capital expenditure which in the long run compromised the indoor air quality and durability of the houses as well as increased the maintenance costs. The study showed that it is cost effective to implement energy saving strategies at the same time as improving the indoor air quality of the homes.

Prepared by Bill Boles. CMHC Project Officer: Virginia Salares. Ottawa: Canada Mortgage and Housing Corporation, 2001 (External Research Program)

AVAILABILITY : Canadian Housing Information Centre

DEVELOPMENT OF A SURVEY INSTRUMENT TO STUDY LINKS BETWEEN LIVING ARRANGEMENTS, HOMELESSNESS AND RESIDENTIAL MOBILITY OF URBAN ABORIGINALS: FINAL REPORT

This pilot study provides information about how a survey methodology can be used to identify patterns of residential mobility among urban Aboriginal populations. The objectives of this pilot study were to design and test such a survey methodology, not to support statistically significant inferences for Aboriginal populations in urban centres. A questionnaire was developed and tested with a sample of 144 Aboriginal respondents living in two urban centres --Toronto (73) and Winnipeg (71). The sample included respondents from First Nations (96), Métis (40), Inuit (4) and other Aboriginal groups (4). Fourteen Aboriginal organizations in the two selected cities identified respondents, the majority of whom were women, and participated in the survey administration. Information was gathered between November, 1999 and January, 2000 using in-person interviews, telephone interviews and self-administered questionnaires.

Substantive issues dealt with general topics such as residential migration and mobility, frequency and duration of homelessness, current and projected housing needs, empirical linkages and diversity (gender, income, employment, education) of the study population. Survey design issues dealt with Aboriginal consultations, representative pre-testing, literacy and survey administration methods. Respondents took an average of 35 minutes to complete the pre-test version of the questionnaire. The section on Moves (Migration and Mobility) provided the greatest recall challenge for respondents.

The pilot study demonstrated that details of past moves can be tracked, within limits. The survey tracked up to three moves within a five year time period based on respondent recall. Field team reports indicate this horizon may be the practical limit of accurate recall. Some data quality problems were associated with questions such as changes in household type and size. The pilot survey explored the reasons and motivations behind the moves of Aboriginal people living in urban areas --what some experts characterize as "push" and "pull" factors. While very preliminary, the pilot survey results were broadly similar to the results of the 1991 APS which showed that family, employment, housing and education are the major reasons for moving. The pilot survey also successfully identified reasons for moves, using questions or probes to identify different types of housing-related reasons for moves. Reasons differ for in-city (mobility) versus to-city (migration) moves. Housing was a bigger factor for in-city moves while work and education were more important for people moving across city boundaries.

The pilot survey explored in some detail housing-related reasons for moving such as affordability, better quality, and housing that better suits household needs. Cumulatively, these different housing-related factors were identified by almost two-thirds of respondents as underlying their most recent move. This is much higher than the percentage of respondents to the APS who identified housing as a factor in either migration or mobility.

Prepared by Turtle Island Associates. Prepared for Research Division, Canada Mortgage and Housing Corporation. CMHC Project Officer: Phil Deacon. Ottawa: CMHC, 2000. 92 pages

NOTE: NOTE: No. 88 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

MEASURING RESIDENTIAL MOBILITY OF URBAN ABORIGINAL PEOPLE

This pilot study provides information about how a survey methodology can be used to identify patterns of residential mobility among urban Aboriginal populations. The objectives of this pilot study were to design and test such a survey methodology, not to support statistically significant inferences for Aboriginal populations in urban centres. A questionnaire was developed and tested with a sample of 144 Aboriginal respondents living in two urban centres -- Toronto (73) and Winnipeg (71). The sample included respondents from First Nations (96), Métis (40), Inuit (4) and other Aboriginal groups (4). Fourteen Aboriginal organizations in the two selected cities identified respondents, the majority of whom were women, and participated in the survey administration. Information was gathered between November, 1999 and January, 2000 using in-person interviews, telephone interviews and self-administered questionnaires.

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Prepared by Turtle Island Associates. Prepared for Research Division, Canada Mortgage and Housing Corporation. CMHC Project Officer: Philip Deacon. Ottawa: CMHC, 2002 printing. (Aboriginal Housing Series) 86 pages

AVAILABILITY : Canadian Housing Information Centre

NATIVE INSPECTION SERVICES INITIATIVE (NISI) GUIDE

Over the years, First Nations throughout Canada have become increasingly interested in being involved in inspecting renovations and new homes in their territories. To address this desire, CMHC developed the Native Inspection Services Initiative (NISI) in 1995, to provide greater First Nation involvement in inspections for CMHC programs and to help build First Nation inspection capacity. Building inspection capacity is an important step in improving First Nations' housing quality.

This Guide explains the requirements of NISI and is a reference guide to inspection for NISI inspectors and organizations. CMHC will continually update the Guide and plans to put the Guide and updates to it on the CMHC web site.

Developed by the Southern First Nations Secretariat, Ontario. CMHC Project Officer: Alain Croteau. Ottawa: Canada Mortgage and Housing Corporation, 2001. 90 pages

NOTE : Aussi disponible en français sous le titre : Guide sur l'initiative des services d'inspection autochtones (ISIA)

AVAILABILITY : On a loan basis from the Canadian Housing Information Centre

RESEARCH AND CONSULTATION PROJECT CONCERNING INUIT HOUSING ACROSS CANADA: FINAL REPORT

The purpose of this project was to develop a more current understanding of housing problems and priorities in Inuit communities, investigate and identify "best practices", and develop a housing strategy which will include innovative new means of financing and alternative forms of housing, recognizing that there is no funding for new housing commitments off-reserve through Canada Mortgage and Housing Corporation (CMHC). The project was jointly funded by CMHC and the Department of Indian Affairs and Northern Development.

Prepared by the Inuit Tapirisat of Canada. CMHC Project Officer: Line Gullison. Ottawa: Canada Mortgage and Housing Corporation, 2001. 52 pages

NOTE : Aussi disponible en Inuktitut et en français sous le titre : Projet de recherche et de consultation sur le logement des Inuits au Canada : rapport final

AVAILABILITY : Canadian Housing Information Centre

NOISE ISOLATION PROVIDED BY GYPSUM BOARD PARTITIONS

The objective of this project was to analyze the results of 350 sound transmission tests conducted on gypsum board partitions of various compositions. The results of these tests were published in report no. 761 produced by the Institute for Research in Construction of the National Research Council of Canada. This report conveys the conclusions of the analysis; it highlights the main factors influencing the performance of gypsum board partitions: the gypsum boards themselves, the studs and stud arrangements, the resilient furrings, and the sound absorptive materials inserted in the cavity.

Prepared by MJM Acoustical Consultants Inc. Prepared for Research Division, Canada Mortgage and Housing Corporation. CMHC Project Officer: Jacques Rousseau. Ottawa: CMHC, 2002. 169 pages

NOTE 1: Aussi disponible en français sous le titre : Isolation phonique procurée par les plaques de plâtres

NOTE: No. 02-108 in the Research Highlights Technical Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

SUMMARY REPORT FOR CONSORTIUM ON FIRE RESISTANCE AND SOUND INSULATION OF FLOORS: SOUND TRANSMISSION CLASS AND IMPACT INSULATION CLASS RESULTS

The IRC Acoustics Laboratory has completed the measurement phase of a study of airborne and impact sound transmission through typical floor constructions used in Canadian housing. As well as the Institute for Research in Construction (IRC) of the National Research Council of Canada, this project was supported by a consortium of some 18 different organizations and government departments, including Canada Mortgage and Housing Corporation and the Canadian Home Builders" Association. This report presents the sound transmission class (STC) and impact insulation class (IIC) ratings for all the floors in the project. Some of the specimens were chosen by IRC for technical reasons, but the majority of the specimens were approved as part of a structured series established collectively by the consortium. The acoustical measurements included impact sound measurements using experimental, non-standard devices. These measurements were made to provide extra information that might be used to improve the existing standardized tapping machine test or to develop new test procedures. A further IRC report will deal with these experimental impact measurements in detail. The combined set of over 190 specimens provides:-- data for systematic evaluation of sound transmission through joist floor systems;-- data for development of prediction methods;-- data for development of improved constructions; and-- a consistent assembly of sound transmission class and impact insulation class data needed by builders and regulators to select constructions suitable for party floors in multi-family dwellings.

Prepared by A.C.C. Warnock and J.A. Birta, Institute for Research in Construction, National Research Council Canada. Ottawa: Canada Mortgage and Housing Corporation, 2001, c1998. xiv, 121 pages

AVAILABILITY : Canadian Housing Information Centre

BASEMENTS, FOUNDATIONS & CRAWLSPACES

INSULATED CONCRETE FORMS TRAINING PROGRAM

This was a multi-partnered project led and managed by the Cement Association of Canada (CAC). Participants include the Portland Cement Association (PCA), Insulating Concrete Form Association (ICFA), National Energy Conservation Association (NECA), Alliance of Canadian Building Officials Association (ACBOA), Association of Canadian Community Colleges (ACCC), Seneca College, Southern Alberta Institute of Technology (SAIT), Atlantic Home Builders' Training Board (AHBTB), Canadian Carpentry Union, CHBA, NRCan and CMHC. The purpose of this project was to develop and pilot a course curriculum and course training materials on how to properly construct insulated form foundation and building systems (ICFs). The course consists of two modules; Introduction to Insulated Concrete Form Construction, and Fundamentals of Concrete Footings and Foundations. It will be promoted to ICF installers, home builders, home inspectors, building officials, and the trades involved in the installation of ICFs. The course material was developed and piloted in two phases over a two-year period from 2000 to 2002. The implementation of the training program into various educational institutions across the country will occur in 2002-2003. Discussions with educational institutions are currently underway. For more information on this training program, contact the Cement Association of Canada.

AVAILABILITY : Cement Association of Canada

UNDERSTANDING AND DEALING WITH INTERACTIONS BETWEEN TREES, SENSITIVE CLAY SOILS AND FOUNDATIONS. ABOUT YOUR HOUSE; CE31

This About Your House publication provides background information and advice on understanding and dealing with interactions between trees, sensitive clay soils and foundation problems. It describes where these soils exist, the impact of soil shrinkage on foundations and the potential role of trees in soil shrinkage. It provides a summary of some of the important factors related to soil shrinkage and foundation stability, as well as tips for managing a tree's contribution to foundation damage.

Ottawa: Canada Mortgage and Housing Corporation, 2001. (About Your House; CF31) 8 pages

NOTE : Aussi disponible en français sous le titre : Comprendre l'interaction des arbres, du sol d'argile sensible et des fondations et agir en conséquence

AVAILABILITY : CMHC Information Products and available on CMHC's Web site. To download this document visit CMHC's Web site at:
http://www.cmhc-schl.gc.ca/en/burema/gesein/abhose/index.cfm

BUILDING CODES

PROJECT TO PROMOTE IMPLEMENTATION OF THE NATIONAL BUILDING CODE AND A STANDARDIZED BUILDING PERMIT IN PRINCE EDWARD ISLAND: THE HOME BUILDERS' ASSOCIATION OF PRINCE EDWARD ISLAND = PROJET VISANT À PROMOUVOIR L'ADOPTION DU CODE NATIONAL DU BÂTIMENT ET D'UNE FORMULE UNIFORMISÉE DE DEMANDE DE PERMIS DE CONSTRUIRE À L'ÎLE-DU-PRINCE-ÉDOUARD : HOME BUILDERS' ASSOCIATION OF PRINCE EDWARD ISLAND

This case study report describes the work in 1998 of the P.E.I. Home Builders' Association to persuade municipal and provincial authorities to adopt the National Building Code and to implement a uniform building and development permit application form. Of the 89 municipalities in Prince Edward Island, only two, Charlottetown and Summerside, apply and enforce the NBC. There is also no building code enforcement in unincorporated areas of the province. The study outlines the arguments in favour of adoption, including consumer protection, safety, financial and industry issues and the impacts on affordability, choice and quality. The standardized permit application form developed by the P.E.I. Home Builders Association is included as an appendix.

Case study written by: Word-Works Communications Services. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 2000. (Affordability and Choice Today (A.C.T.) Regulatory Reform Project; ACT Case Study) 36 pages

Order Number: 62001

AVAILABILITY : CMHC Information Products

ROLE OF CONSTRUCTION CODES IN THE CANADIAN BUILDING SYSTEM

The purpose of this joint venture project with NRC and CHBA is to develop two papers which will help in the understanding of the changes to the Model National Codes which are occurring as a result of efforts currently underway to clarify the objectives of these codes and move them to being Objective-Based. The first paper is entitled "Canada's Construction System and the Context for Model Codes". It presents an overview of the system of construction in Canada and the role of Model Codes in that system. The second paper describes the value and benefits of Objective-Based Codes to residential builders and renovators. The papers have been published by NRC.

AVAILABILITY : On the Internet: http://www.ccbfc.org/ccbfc/tgs/obc/docs/

BUILDING MATERIALS

CEMENT SKIN EPS CORE BUILDING SYSTEM: PROOF OF CONCEPT TESTING - PRELIMINARY STRUCTURAL EVALUATION

This research was carried out on a cementitious-skin structural sandwich wall having a core of expanded polystyrene (EPS). As a simple site-built assembly, the method was initially intended for low-cost owner-build applications. It can be used to construct high-performance building envelopes that can be built quickly, with low-skilled labour, at low cost and with materials that are readily available. The proponents, Brad Robinson and Emmanuel Blain-Cosgrove, developed the system with the challenges of sustainable building in mind: affordability, energy efficiency, minimal environmental impact materials and occupant health. It is composed of an (EPS) panel core, wrapped in polymer mesh and covered with stucco on both sides. The result is a highly resource and energy-efficient building envelope system.

The project's objective was to undertake a "proof of concept testing" of the wall system to verify its structural capacity and to determine if it is suitable and safe for use in ancillary and residential buildings. Research was conducted by Prof. Yixin Shao from the Civil Engineering Dept. at McGill University. Among the proof of concept tests were compressive, shear and flexural performances of samples and a full-scale wall. Freeze-thaw (durability) and blow-torch tests were also carried out. From the results, it could be concluded that the EPS sandwich is strong enough to serve as a load-bearing exterior wall for one-storey residential housing, even by minimizing materiel. Further work on the system could look at methods to improve fire safety and the effect of water saturation, as proposed by R.E. Platts in its appended independent review of the research.

Presented by Emmanuel Blain-Cosgrove. CMHC Project Officer: Silvio Plescia. Ottawa: Canada Mortgage and Housing Corporation, 2001. (External Research Program Research Report) 52 pages

AVAILABILITY : Canadian Housing Information Centre

COMPOSITE MASONRY WALL TIES: FINAL REPORT

This project aimed at developing a prototype masonry tie using composite materials, which would fulfill structural requirements, be immune to corrosion and manufactured at a lesser cost. The project originated from the fact that current galvanized masonry ties do not meet new standards. The alternative, stainless steel ties are 80% to 100% more expensive.

Several prototypes were developed and tested, concluding that an adjustable tie can be manufactured from glass fibre reinforced polymer composite (GFRPC). Specifically, the most promising tie would be used between masonry veneer and a concrete block backup wall system with 50 mm air space and 50 mm rigid insulation. The investigator made prototypes that meet current standards and show promise that they could be manufactured competitively.

Prepared by Vera Straka, Dept. of Architectural Science, Ryerson University. CMHC Project Officer: Luis de Miguel. Ottawa: Canada Mortgage and Housing Corporation, 2002. (External Research Program Research Report) 51 pages

NOTE: No. 02-109 in the Research Highlights Technical Series summarizes the results of the research and is available on the CMHC web site

AVAILABILITY : Canadian Housing Information Centre

SERVICE LIFE OF MULTI-UNIT RESIDENTIAL BUILDING ELEMENTS AND EQUIPMENT

Maintaining Canada's housing stock requires timely investment of funds for replacement of building elements and equipment. CMHC engaged IBI Group to survey experienced building professionals across Canada to obtain real life, non-theoretical estimates of service life for over 230 components in apartment buildings over five storeys high. The information was collected through a three-stage survey and analysis process resulting in an average high-end and low-end estimate of service life for each building item. The resulting range was then divided into approximately equal three sub-ranges: below average, average and above average length of service life. Using a model building, costs were developed based on specific assumptions for length of building life, inflation rate for construction and discount rate. This information produced a range of annual contribution amounts necessary to maintain the reserve fund. This report summarizes the study, lists the results and describes a process to make immediate use of the information.

A generic reserve fund cash flow model has been prepared as part of this project. You may obtain a copy of the Excel spreadsheet from the following URL address:
ftp://ftp.cmhc-schl.gc.ca/servicelife

Prepared by IBI Group. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 2000. (Housing Technology Series) 68 pages

Note : Aussi disponible en français sous le titre : La Durée de vie utile des matériaux et équipements techniques des édifices résidentiels de moyenne et grande hauteur

AVAILABILITY : CMHC Information Products *Order Number: 62280*

VIRTUAL SAMPLE ROOM WEB SITE OF GREEN BUILDING MATERIALS - PHASE II

The Virtual Sample Room is a web site that provides information for designers, builders, renovators, and consumers on building materials that are environmentally responsible and/or minimize indoor air pollution. The site was developed and continues to be owned by a consortium of federal government departments and municipalities. The purpose of this Phase II project was to expand the number of product listings from the original 200, and to improve the promotion of the site. The site now includes approximately 750 product listings, covering almost all areas of construction, and is being promoted by the various partners. The site has a new URL and will be "re-launched" later in 2001. The site is now active and can be visited at http://www.designinggreen.com/.

AVAILABILITY : On the Internet: http://www.designinggreen.com/

CHILDREN·S ENVIRONMENTS

HOUSING CANADA'S CHILDREN

This study looks at children and the families in which they are raised, in the context of their environments. It presents a number of facts about Canadian households with children that describe their make up, the types of housing in which they live and their tenure arrangements. It also draws attention to the probable links between housing environments and children's development outcomes.

Overall, the findings of this study suggest that most children in Canada are raised in good housing environments. Eighty-five per cent of households with children lived in dwellings that were affordable, were in good repair and had enough bedrooms for the number and mix of household members, or they could have afforded to rent dwellings meeting these standards. However, the other 15% of households with children were in core housing need and they experience problems of affordability, housing disrepair and/or over-crowding. Furthermore, lone-parent households, family households that rented their accommodation and households with children with disabilities or Aboriginal identity were particularly susceptible to living in core housing need.

In 1996, two-parent households spent on average 21% of their income on shelter costs. In contrast, lone-parent households spent 34% of their income for shelter, which is higher than the norm for affordability and fewer of them lived in single-family housing units than in 1976. Households that spend more than the norm for their shelter - in terms of dollar amounts and the proportion of their incomes - are left with less to spend on other areas including food, transportation, recreation, children's clothing, education and reading, and child care. These items in general support healthy child development.

The study also shows that housing disrepair and crowding bear a relationship to child development outcomes. The potential exists for detrimental long-term effects on children raised in crowded dwellings in disrepair. The findings suggest that these children are more at risk of poor health, asthma, poor school performance, aggressive behaviours and trouble with the law. For example, 89% of children in sufficient housing were in excellent health compared to only 72% of children in crowded housing in disrepair, an outcome that underlines the importance of good housing environments for healthy development.

Prepared by Canadian Council on Social Development. CMHC Project Officer: Fanis Grammenos. Ottawa: Canada Mortgage and Housing Corporation, 2000. (Distinct Housing Needs Series) 34 pages

Order number: 62209

NOTE 1 : Aussi disponible en français sous le titre : Le logement des enfants au Canada

NOTE 2 : No. 55-4 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : CMHC Information Products

ASSESSING THE FULL COSTS OF WATER, LIQUID WASTE, ENERGY AND SOLID WASTE INFRASTRUCTURE IN THE FRASER VALLEY REGIONAL DISTRICT

This project was conducted for CMHC by The Sheltair Group Inc. in order to demonstrate the benefits of using full-cost accounting tools and techniques to evaluate the social, economic, and environmental costs and impacts of urban growth. Using the Fraser Valley Regional District (FVRD) in British Columbia as a case study, a two-part project was conducted. The project resulted in the development of a methodology and an associated software tool for compiling and analysing detailed infrastructure profiles, and then using these profiles to assess the full costs of different growth scenarios. The report is organised in two parts: Part 1 provides background information about the FVRD, and presents a methodology specific to the Regional District. Part 2 describes the development of the software tool, and presents results of the application to the FVRD.

Prepared by The Sheltair Group Inc. and the International Centre for Sustainable Cities (Sustainable Cities Foundation). Prepared for: Research Division, Canada Mortgage and Housing Corporation; Planning Department, Fraser Valley Regional District, Growth Strategies Office, Ministry of Municipal Affairs. CMHC Project Officer: Doug Pollard. Ottawa: Canada Mortgage and Housing Corporation, 2000.

NOTE: No. 85 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

IMPLEMENTING THE OUTCOMES OF THE SECOND UNITED NATIONS CONFERENCE ON HUMAN SETTLEMENTS (HABITAT II): CANADA'S RESPONSE = MISE EN OEUVRE DES MESURES ADOPTÉES LORS DE LA DEUXIÈME CONFÉRENCE DES NATIONS UNIES SUR LES ÉTABLISSEMENTS HUMAINS (HABITAT II) : RAPPORT DU CANADA

The Second United Nations Conference on Human Settlements, Habitat II, was held in Istanbul, Turkey in June 1996. Habitat II brought together representatives from 171 countries to discuss an issue of global concern: shelter and human settlements in a rapidly urbanizing world. The countries participating in Habitat II adopted the "Habitat Agenda", a commitment by the world's nations to improve living conditions in the world's cities, towns, and villages.

In June 2001, five years after Habitat II, the General Assembly of the United Nations held a special session, popularly known as Istanbul + 5, to review and appraise implementation of the "Habitat Agenda" worldwide. In preparation for this session, countries wereinvited to report on implementation of the Agenda. The United Nations Centre for Human Settlements (UNCHS) has developed reporting guidelines for use in the preparation of the national reports.

In response to the UNCHS invitation, Canada has prepared this Country Report, based upon a series of six Technical Reports. Part of this report focuses on qualitative and quantitative data addressing a series of identified indicators. These indicators are intended to measure progress relative to a number of commitments and recommendations in the Habitat Agenda. Canada' s indicators data has been provided, where possible, for Canada as a whole and for each of five major urban areas: Vancouver, Calgary, Toronto, Montreal, and Halifax.

The main body of this report is divided into seven sections: an introductory overview, and six thematic chapters as requested by the UNCHS:

- Overview: The Canadian Approach
- Chapter 1: Shelter
- Chapter 2: Social Development and Eradication of Poverty
- Chapter 3: Environmental Management

- Chapter 4: Economic Development
- Chapter 5: Governance
- Chapter 6: International Cooperation.

Within each chapter, five subsections provide the following information:

- The first subsection addresses the identified indicators for the topic of the chapter.
- The second and third subsections provide an overview of key federal and provincial government initiatives relevant to the topic of the chapter. The information contained in these subsections was obtained via surveys of federal and provincial agencies.
- The fourth subsection summarizes selected municipal/local best practices relating to the topic of the chapter. The examples presented have all been independently evaluated as best practices through the mechanism of the UNCHS Best Practices Program and Database.
- The final subsection is a synthesis of stakeholder views on the topic of the chapter, derived from a series of interviews and reflecting a diversity of viewpoints on a number of key issues.

The Quebec Report was prepared by the Government of Quebec. It reviews the implementation of the Habitat Agenda in Quebec from the provincial perspective, and may be found in the Annex.

Canada Mortgage and Housing Corporation (CMHC) assumed overall responsibility for preparation of this report, with assistance from an Interdepartmental Steering Committee. Marbek Resource Consultants Ltd. undertook all research and writing, with contributions from Greg Lampert, Economic Consultant. Extensive assistance was provided by Statistics Canada and Environment Canada for the indicator data. Many other federal and provincial agencies provided information and input, as did a range of stakeholders. Provinces and territories that contributed to the development of the Country Report include Ontario, Quebec, New Brunswick, Manitoba, British Columbia, Prince Edward Island, Alberta, Saskatchewan, Newfoundland, and Nunavut.

Ottawa: Canada Mortgage and Housing Corporation, 2001. ca 320 pages

Text in English and in French.

Order number: 62321

AVAILABILITY : CMHC Information Products and
http://www.cmhc-schl.gc.ca/en/search_results.cfm

WHY CITIES MATTER: POLICY RESEARCH PERSPECTIVES FOR CANADA

The objective of the research was to assess existing knowledge of the ways cities matter in an era of globalization, identify common themes from the literature and existing policy networks and propose future directions for policy research and action at the community as well as the regional and national levels.

Contrary to predictions of the "locationless" effects of virtual communications and the "death of distance", urban centres have become more - not less - important as places where people live, work and play. Yet, experience shows that cities can be both engines of national prosperity and locales where the risks of social exclusion and environmental degradation exist. Better understanding is required of the factors that will sustain vibrant Canadian cities and healthy communities in a global age. This project examined these issues in the literature, through existing policy and networks and through a roundtable.

The first part of the paper traces the complex economic, social and political transformations that have put Canadian cities back on the agenda of policy communities. Choices must be made about how our urban spaces will be managed, whether investments will be made in human resources and physical infrastructure of cities and what new fiscal tools and financing mechanisms will be available to municipalities. The second part of the paper provides historical perspective on these challenges and choices and shows that the present day is not the first time that such fundamental questions have surfaced about cities and their role in national life. The third part of the paper maps four distinctive frameworks for mobilizing and advancing strategies to regenerate Canadian cities. These are: economic cluster; social inclusion; community economic development; and environmental sustainability. The major political challenge is to bring these respective advocacy networks together into a workable policy mix. The fourth part of the paper addresses the possibilities for progress, connecting a vision of community-based regionalism to the fundamental questions of urban governance. Given the increasingly important role of cities in shaping the country's economic, social and environmental well-being, Canada's new urban agenda must better align federal, provincial and municipal policies with the physical design and community planning of the country's diverse city-regions.

Prepared by Neil Bradford. Ottawa: Canadian Policy Research Networks, 2002. (CPRN Discussion Paper no. F/23.) viii, 86 pages

AVAILABILITY : Available on the web site of Canadian Policy Research Network

COOPERATIVE AND NON-PROFIT HOUSING

CANADIAN HOUSING AND RENEWAL ASSOCIATION RESEARCH PROJECT ON BOARD RENEWAL

Non profit boards have found themselves under increasing strain in recent years, and within the non profit housing sector many boards find themselves in need of renewal and rejuvenation. This project looks at the issues and how boards face the challenges. The study was done in incremental phases involving: a literature search; interviews with boards in other sectors that have undergone board renewal, followed by interviews with non-profit housing boards; and, three case studies of non-profit housing boards experiences.

Experiences, approaches and tools are detailed throughout the body of the report, with Section 6.0 providing a summary of observations, key conclusions, symptoms of board fatigue or dysfunction, preventive action, and available resources.

Prepared by Urban Aspects Consulting Group Ltd. Prepared for Canadian Housing and Renewal Association for Canada Mortgage and Housing Corporation. Ottawa: Canada Mortgage and Housing Corporation, 2000. 55 pages

AVAILABILITY : Canadian Housing Information Centre

SITUATIONS DE CRISE DANS LES COOPÉRATIVES : MIEUX COMPRENDRE POUR MIEUX INTERVENIR

Housing cooperatives are home to 90,000 households in Canada. These units are owned by 2,100 cooperatives. In Quebec, there are approximately 1100 cooperatives which account for 23,000 members. Housing cooperatives in Quebec are smaller than those elsewhere in Canada, except in the Atlantic Provinces. They include a lot of "purchase-renovation projects" and rely on management consisting totally of volunteers in the vast majority of cases.

Though housing cooperatives have been successful for the most part, some housing cooperatives have to cope with crisis situations. Although the vast majority of these cooperatives manage to emerge from their predicaments and restore financial and associative balance, others are confronted by enduring crises which compromise their existence. These crises are usually attributable to several factors, including problems relating to project involvement, finances, buildings and the associative and community living. The aim of this research is to understand the origin of these crises, the conditions that give rise to their emergence and solutions which can be put forward to resolve and, if possible, prevent them.

Prepared by the Confédération québécoise des coopératives d'habitation. CMHC Project Officer: Marie Murphy. Ottawa: Canada Mortgage and Housing Corporation, 2002. (External Research Program Research Report)

AVAILABILITY : Canadian Housing Information Centre

DISCRIMINATION IN HOUSING

HOUSING DISCRIMINATION IN CANADA: THE STATE OF KNOWLEDGE

This report is based on a review of research findings on housing discrimination in Canada, an assessment of the strengths and weaknesses of the research methods used, and a field consultation on current issues with informants from various stakeholder groups, e.g., landlord representatives, tenant advocates, real estate and financial representatives.

Much of the research has focused on perceptions of discrimination among ethno-racial minority groups. Generally, the studies are small-scale, use survey methods, use measures of perceived discrimination, and are limited to a few cities and to the rental sector. Findings from quantitative studies conducted from 1957 to 1996 show that racial discrimination is a continuing problem. More recent studies have documented discrimination against women. Other legally prohibited grounds for discrimination, e.g., family status, receipt of social assistance, age, disabilities, and sexual orientation, have not been part of any systematic research. Virtually nothing is known about discrimination in the housing sales market, mortgage lending, or home insurance.

There is widespread agreement that the existing data on housing discrimination are inadequate for directing policy decisions. This report concludes with a research agenda that would address current knowledge gaps.

Prepared by Sylvia Novac, Joe Darden, David Hulchanski, and Anne-Marie Seguin with the assistance of Francine Bernèche. CMHC Project Officer: Phil Deacon. Ottawa: Canada Mortgage and Housing Corporation, 2002. 96 pages

NOTE: No. 104 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

ENERGY CONSERVATION

AIR LEAKAGE CHARACTERISTICS, TEST METHODS AND SPECIFICATIONS FOR LARGE BUILDINGS

CMHC recently completed a survey of published air leakage data for multi-unit residential and large commercial buildings. The objective of the study was to compile air leakage data for large buildings, identify air leakage test methods, performance targets and the availability of specifications and quality control procedures to reduce air leakage in large buildings. The results of the review show that virtually all large buildings, both new and old, are quite leaky when compared to recommendations contained within the Appendices of the 1995 National Building Code of Canada. Measured air leakage levels range from 10 to 50 times recommended levels. Despite this, there have been several building projects that have demonstrated that air leakage can be significantly reduced when proper building air barrier details are designed and installed, and where quality assurance measures are in place. The information provided by this project serves to baseline the current performance of air barrier systems in conventional large buildings and also shows what levels of performance are possible with better design, construction, testing and commissioning methods. The project report will serve as an important reference document as efforts move forward to improve the quality of building envelope systems.

Prepared by Gary Proskiw, Proskiw Engineering Ltd. and Bert Phillips, Unies Ltd. CMHC Project Officer: Duncan Hill. Ottawa: Canada Mortgage and Housing Corporation, 2001. 85 pages

AVAILABILITY : Canadian Housing Information Centre

ENERGY USE PATTERNS IN OFF-GRID HOUSES

To consider opportunities to reduce greenhouse gas, a contractor surveyed twelve households across Canada which have been 'off the grid' for at least two years, with a focus on renewable energy sources such as solar, wind, and micro/minihydro. The contractor documented energy use and lifestyle patterns that accommodated the limits of off-grid electrical production. The objective was to provide examples of approaches relevant to mainstream housing. The field work is complete and the report is available as a research highlight on the CMHC website. There were no consistent energy saving measures that emerged from the research which are particularly suitable for mainstream houses. The report is useful however as a illustration of the variety of approaches used for offgrid housing and the range of energy consumption patterns in housing.

Research Consultant: Shawna Henderson, Abri Sustainable Design. CMHC Project Officer: Don Fugler. Ottawa: Canada Mortgage and Housing Corporation, 2001. (Research Highlights; Technical Series: 01-103) 24 pages

NOTE : Aussi disponible en français sous le titre : Consommation d'énergie dans les maisons hors réseau

AVAILABILITY : CMHC Information Products and available on the CMHC web site

LOW-TEMPERATURE HYDRONIC HEATING AND HIGH-TEMPERATURE COOLING: A CANADIAN OPTION FOR MORE SUSTAINABLE BUILDINGS

Residential and commercial buildings account for about 32% of secondary energy use in Canada, and for over 29% of greenhouse gas emissions. Space and water heating and space cooling needs account for over 80% of residential energy use and 70% of commercial energy use.

There are numerous approaches and technologies that can contribute to more sustainable buildings and communities. This report investigates a specific technical and philosophic approach to building energy use: the use of low-grade energy sources, low- temperature heating systems, and low-temperature cooling systems. The report outlines technical features, applications, benefits, opportunities, and obstacles associated with such systems.

Prepared by Katherine Arkay Consulting. CMHC Project Officer: Ken Ruest. Prepared for Research Division, Canada Mortgage and Housing Corporation and Natural Resources Canada. Ottawa: Canada Mortgage and Housing Corporation, 2000. 2 volumes
Volume 1: Project Report (150 pages) Volume 2: Consultation Process Results (47 pages)

AVAILABILITY : On an interlibrary loan basis from the Canadian Housing Information Centre

RETROFITTING A CITY: A GUIDE FOR MUNICIPALITIES TO IMPLEMENT A BUILDING RETROFIT PROGRAM

The primary goal of this project was to help municipalities across North America improve energy efficiency in buildings and reduce their greenhouse gas emissions. Based on Toronto's successful Better Buildings Partnership Program the project produced this useable manual for designing and implementing municipal building retrofit programs to improve water and energy efficiency. Building retrofits can reduce greenhouse gas emissions by lowering energy consumption. Undertaken on a wide scale, retrofitting buildings can enhance the sustainability of urban centres by diminishing air pollution locally and slowing the rate of consumption of natural resources.

Building energy retrofits should follow a process which includes the following steps:
-- Audit: a study of the building and the way it uses energy which leads to a definition of appropriate measures;
-- Implement: the implementation of the measures including engineering, project management, subcontracting, and commissioning;
-- Monitor: the monitoring and tracking of energy savings to be sure they are achieved as expected, and they are sustained.

This process, and the steps on which it is based, are described in detail throughout the manual.

Designed and written by Bob Bach and Marjorie Lamb. Canada Mortgage and Housing Corporation, Enbridge Consumers Gas, and Ontario Power Generation sponsored the project. CMHC Project Officer: Brian Eames. Ottawa: CMHC, 2001. 44 pages

NOTE 1 : Aussi disponible en français sous le titre : Rattrapage éconergétique d'une ville : guide proposant aux municipalités des moyens de mettre en oeuvre un programme de rattrapage des bâtiments

NOTE 2: No. 105 in the Research Highlights Socio-economic Series summarizes the results of the research and is available on the CMHC web site

AVAILABILITY : Completed Report and Research Highlight are available on the CMHC web site

SURVEY OF MULTI-UNIT RESIDENTIAL BUILDING CHARACTERISTICS AND ENERGY USE DATA

This project involved the collection of the physical and operational characteristics of 40 multi-unit residential buildings from all regions in Canada. Energy and water consumption histories for the past 2 to 3 years have also been collected for each building. The survey portion of this work is now complete. CMHC has developed a database (HiSTAR) to store the building files and to allow for the comparison of energy and water usage given building age, size, region, fuel type and occupancy. The building files will also be used in combination with an energy simulator-green house gas estimator to estimate the impact of upgrading the stock of multi-unit residential buildings in Canada. The database will be supplemented with additional buildings that CMHC will access in the course of other research projects.

Note: No. 01-142 in the Research Highlights Technical Series summarizes the results of this research and is available on the CMHC web site. The title is: "Analysis of the Annual Energy and Water Consumption of Apartment Buildings in the CMHC HiSTAR database".

AVAILABILITY : CMHC Information Products and available on the CMHC web site

CMHC GARBAGE BAG AIRFLOW TEST. ABOUT YOUR HOUSE; CE33

It is difficult for householders or small contractors to estimate airflows in the home. Suitable measuring equipment is not available for householder's use and the airflow test equipment available for contractors is relatively expensive and unwieldy. One alternative test method is to time the inflation of a garbage bag to estimate duct flow. The flow vs time characteristic was approximately established by CMHC research over ten years ago. This research has refined and extended the garbage bag air flow test procedure. This About Your House document has been prepared on how to do the test. The test, while somewhat crude, is a good indicator of flow for both householders and contractors.

Ottawa: Canada Mortgage and Housing Corporation, 2001. 2 pages. Order Number: 62288

AVAILABILITY : CMHC Information Products and available on the Internet: http://www.cmhc-schl.gc.ca/en/burema/gesein/abhose/index.cfm

COMPLIANCE OF VENTILATION SYSTEMS INSTALLED TO MEET THE JUNE 18, 2001 DRAFT OF SECTION 9.32 "VENTILATION" FOR THE NBCC : FINAL REPORT

A 1999 study on compliance of new residential ventilation systems found that few, if any ventilation systems were in full compliance with the Section 9.32 "Ventilation" in the 1995 National Building Code of Canada (NBCC). Of particular concern was the fact that Sub-section 9.32.3.8 "Protection Against Depressurization" appeared to permit levels of house depressurization which are not permitted for B-vented gas appliances under the B-149 gas code. The majority of study houses were within the depressurization limits defined in 9.32 but few would comply with the depressurization limit in B149. To address this issue, the Task Group reviewing Mechanical Ventilation for Houses for the NBCC Standing Committee on Houses has drafted proposed changes to the 1995 NBCC requirements for residential ventilation systems. These proposed changes are referred to as the June 18, 2001 Draft of Section 9.32.

UNIES Ltd. was contracted by CMHC to arrange for, inspect and test ventilation systems in ten houses with ventilation systems designed and installed by a heating contractor with the intent of meeting the June 18, 2001 Draft of Section 9.32. In September 2001, meetings were held with residential heating contractors in Winnipeg and Calgary to review the requirements in the June 18, 2001 Draft of Section 9.32 to provide them with background information on this project, and to encourage their participation in this project.

In December 2001 and January 2002, ventilation systems designed and installed to meet the June 18, 2001 Draft of Section 9.32 were inspected and tested. In all, five houses in Manitoba and five houses in southern Alberta were tested. This report provides a commentary on the differences between the 1995 NBCC Section 9.32 "Ventilation", response of installers to the proposed changes, a description and assessment of the ventilation systems installed to meet the June 18, 2001 Draft of Section 9.32 "Ventilation", and commentary as to how the ventilation systems installed comply with the 1995 NBCC Section 9.32.

Prepared by Bert Phillips, UNIES Ltd. CMHC Project Officer: Don Fugler. Ottawa: Canada Mortgage and Housing Corporation, 2002. 32 pages

AVAILABILITY : Canadian Housing Information Centre

PERFORMANCE ASSESSMENT OF THE LEBRETON FLATS DISTRICT HEATING SYSTEM, OTTAWA, ONTARIO, CANADA

The Lebreton Flats district heating system, installed 20 years ago, is one of few examples of low temperature district heating systems in North America. The availability of fuel consumption and maintenance records for the system allowed for an assessment of the performance of the system over the last 20 years. The assessment found that the plant provides space heating and hot water at a cost competitive with individual building systems but without the requisite building space. The distribution system was considered to be in good condition, as minimal heat losses were noted. It was also determined that other heating options, such as conversion to individual boiler systems, would not be competitive with the existing system. This study demonstrates that over the long term, low-temperature district heating systems can be attractive alternatives to conventional space and domestic hot water heating systems.

Prepared by C.W. Snoek, Department of Natural Resources Canada, CANMET Energy Technology Centre, Community Energy Systems Group. CMHC Project Officer: Duncan Hill. Ottawa: Canada Mortgage and Housing Corporation, 2001. 127 pages

NOTE: No. 02-127 in the Research Highlights Technical Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

POSITIVE PRESSURE VENTILATION FOR HIGH-RISE BUILDINGS

Positive pressure ventilation (PPV) is achieved by placing fans outside a building and blowing air into the structure. When appropriate openings or vents are used in the structure, the airflow produced by the fan exhausts contaminants to the outside. Fire departments have used PPV as a means to ventilate contaminated atmospheres after initial knockdown and extinguishment of a fire. In Ontario, the use of positive pressure ventilation is still relatively new. However, its use as a tool to improve conditions is being explored by a number of fire departments, including the Ottawa Fire Department.

In 1998, a joint project with Canada Mortgage and Housing Corporation, Ottawa Fire Department, Tempest Technology Corporation, the Co-operators Insurance and National Research Council Canada (NRC), was initiated to investigate the use of PPV to vent smoke from high-rise buildings. NRC's ten storey facility was used for the investigations.

In the initial phase of the project, baseline tests were conducted to determine the airflow through an open exterior stair shaft door and pressures in the stair shaft produced by the fans under non-fire conditions. A second series of baseline tests were conducted using propane burners to simulate conditions (temperature and CO2 concentrations) produced by a fire. These tests were used to investigate the effect of various parameters, including vent area on the effectiveness of the PPV system. Subsequently, the PPV system was used to vent smoke produced by fires involving typical residential furniture (sofas and beds). In addition, a limited number of tests were conducted with sprinklered heptane pan fires to investigate the effectiveness of the system in venting cool smoke.

PPV system operations simulated included post-fire venting of a stair shaft and venting of a corridor on the fire floor during fire attack. Tests with the residential furniture were conducted under both summer and winter conditions to determine the effects of ambient temperature. The results of the test program are summarized in this report.

Prepared by G.D. Lougheed, P.J. McBride and D.W. Carpenter. Ottawa: Institute for Research in Construction, National Research Council Canada, 2002. (Research Report 102) 96 pages

AVAILABILITY : NOTE: Available on a loan basis only from: Canadian Housing Information Centre

HEATING AND VENTILATION

THERMOSTAT SETTINGS IN HOUSES WITH IN-FLOOR HEATING

This project surveyed 50 homes with hydronic in-floor heating and 25 control homes to determine if houses with in-floor heating have lower thermostat settings than those of houses with other types of heating systems. Lower home temperatures would reduce energy consumption. Sales literature for hydronic heating sometimes makes this claim. The field work revealed that houses with in-floor hydronic heating have thermostat settings similar to houses with other heating systems, and that there are no energy savings that can be attributed to lower thermostat settings for hydronic in-floor heating.

Contractor: Jennifer Foote. CMHC Project Officer: Don Fugler. Ottawa: Canada Mortgage and Housing Corporation, 2001. (Research Highlights; Technical Series: 01-106) 2 pages

NOTE : Aussi disponible en français sous le titre : Réglage du thermostat dans les maisons dotées d'un plancher chauffant

AVAILABILITY : CMHC Information Products and available on the CMHC web site

HIGH-RISE AND MULTIPLE UNIT CONSTRUCTION

BEST PRACTICE GUIDE - WOOD FRAME ENVELOPES IN COASTAL CLIMATES OF BRITISH COLUMBIA

Building in B.C.'s coastal climate has special challenges -- and this revised guide is the most up-to-date, authoritative information available to help meet those challenges. This guide provides the most comprehensive technical information on how to build to withstand the conditions of B.C.'s coastal climate. The information includes behaviour of wood in construction, moisture source control strategies, heat flow mechanisms, typical envelope assembly characteristics, and materials for inclusion in specifications, quality assurance strategies, maintenance and renewal strategies and more that fifty-three state-of-the-art CAD details showing several air barrier strategies, all included on the companion CD-ROM. Endorsed by the Canadian Wood Council and the Building Envelope Research Consortium.

Ottawa: Canada Mortgage and Housing Corporation, 2001. 258 pages + CD-ROM

Order Number: 60959 **Price: $89.00 + GST and handling charges

NOTE : Aussi disponible en français sous le titre : Guide des règles de l'art : Enveloppe de bâtiments à ossature de bois dans le climat littoral de la Colombie-Britannique

AVAILABILITY : CMHC Information Products

BETH PROJECT: A BUILDING ENVELOPE TEST HUT IN COASTAL BRITISH COLUMBIA: FEASIBILITY STUDY

A study was performed to determine the feasibility of an outdoor test facility for building envelope materials and components in Vancouver. Test facilities are useful for real-time, real-weather performance assessment of construction materials and assemblies. There are several such facilities in use around the world but none in a climate comparable to that of coastal British Columbia. The feasibility study included a review of existing similar facilities, determination of criteria for a successful Vancouver facility, investigation into research grant opportunities for funding the facility's construction, development of a conceptual design for the facility and its experimental capabilities in order to determine a cost target for fundraising, sampling of a pool of potential paying users of the facility, identification of possible sites and project custodians, and development of a project development plan. The study of Phase 1 of this work indicated that the concept for a Vancouver test facility is viable enough to warrant movement into the next phase of project development: handover to a project development team and initiation of fundraising. Phase 2 is underway.

Prepared by Forintek Canada Corp. Prepared for Canada Mortgage and Housing Corporation and Homeowner Protection Office. CMHC Project Officer: Silvio Plescia. Ottawa: Canada Mortgage and Housing Corporation; Vancouver: Homeowner Protection Office, 2001. 49 pages

AVAILABILITY : On an interlibrary loan basis from the Canadian Housing Information Centre

BREEAM GREEN LEAF ECO-RATING PROGRAM: CMHC MULTI-RESIDENTIAL BUILDINGS ASSESSMENT PILOT: FINAL REPORT

There are many reasons for measuring the environmental performance of buildings, chief among them being that it can help building owners decide where to put their retrofit dollars to improve their buildings and reduce operating costs.

BREEAM/Green Leaf is an environmental assessment protocol that was developed in response to the need in the marketplace for a less expensive methodology that could be partially conducted in-house. This makes it an appropriate introductory whole-building, comprehensive energy and environmental assessment for managers of multi-residential buildings. The assessment is based on an investigation of building performance and management practices by use of a checklist and walk-through survey. The data is then used to generate a report, which provides a building rating and a list of recommendations to improve the building and management performance. The methodology originated in Canada and was developed by ECD Energy and Environment Canada and Terra Choice. It combined the BREEAM set of environmental issues with the Green Leaf Eco-Rating procedure.

CMHC commissioned the environmental assessment of six high-rise multi-residential buildings, using the BREEAM Green Leaf assessment methodology. The objectives of the pilot were:

- To find out how well the six buildings apply healthy housing principles
- To obtain client feedback on environmental issues, including healthy housing principles
- To obtain client feedback on the value of the environmental assessment.
- To find ways to better reflect healthy housing principles in the assessment methodology.

Six detailed, individual building assessment reports were undertaken. This report summarizes the results of the findings and the user survey.

Prepared by ECD Energy and Environment Canada Ltd. CMHC Project Officer: Sandra Marshall. Ottawa: Canada Mortgage and Housing Corporation, 2001. 55 pages

AVAILABILITY : Canadian Housing Information Centre

BUILDING ENVELOPE REHABILITATION: CONSULTANT'S GUIDE AND BUILDING ENVELOPE REHABILITATION: OWNER-PROPERTY MANAGER GUIDE

Many wood-frame buildings in B.C. have moisture problems -- and some have already been repaired once. Buildings that have never been rehabilitated and buildings that have been rehabilitated once will need work over the next few years. The fact that many buildings require a second rehabilitation emphasizes the need for the development of guidance with respect to effective rehabilitation measures.

The Owner-Property Manager Guide is intended to give owners and property managers a better understanding of the technical concepts and issues of rehabilitation. It is also intended to create a better understanding of the rehabilitation process. This improved understanding will help owners make more informed decisions, give property managers better guidance and create better communication among everyone involved in rehabilitation a building.

The Consultant's Guide has more technical detail than its companion volume listed above, and focuses more on the consultant's role in rehabilitation.

These Guides deals with the repair and rehabilitation of building envelopes of multi-unit wood-frame buildings in the coastal climate zone of British Columbia. Much of the material in these Guides, particularly process-related information, may apply to other climate zones and building types. However, some analysis of the impact of different climate factors and specific building attributes must be considered before using the Guide.

Prepared for Canada Mortgage and Housing Corporation by RDH Building Engineering Limited. CMHC Project Officers: Mark Salerno and Ken Ruest. Ottawa: CMHC, c2001.

Order Number for Owner-Property Manager Guide (103 pages): 62307 ($89.95 + GST + Handling Fee)
Order Number for Consultant's Guide (177 pages): 62305 ($129.95 + GST + Handling Fee)

NOTE: Aussi disponible en français sous le titre : Réhabilitation de l'enveloppe de bâtiment : Guide du propriétaire et du gestionnaire immobilier et Réhabilitation de l'enveloppe de bâtiment : Guide du consultant

AVAILABILITY : CMHC Information Products

CASE STUDY OF A SUCCESSFUL INNOVATIVE MULTI-UNIT RESIDENTIAL BUILDING: A COMPENDIUM OF RESEARCH OF THE CONSERVATION CO-OP BUILDING

In 1995, a multi-unit residential building, the Conservation Co-op, was constructed that embodied as many environmentally sound concepts and technologies as was possible within the confines of an extremely tight budget. The objective of the development team was to provide affordable housing with minimal environmental impact, enhanced durability and superior occupant health and comfort. After five full years of occupancy, Canada Mortgage and Housing Corporation initiated a review of the performance of the building, particularly with respect to energy and water consumption, indoor air quality and the operational experience with many of the "green" innovations included in the building. The review revealed that the enhanced insulation levels, high efficiency space and domestic hot water heating appliances, low E windows, and heat recovery ventilation were economically sound choices. It also illustrated the costs associated with continuous ventilation strategies and the need for more efficient fan-motor set technologies and distribution systems. Many of the "green" features met, or exceeded expectations while others failed altogether. Overall, the building is a successful project as it managed to incorporate many environmentally sound design and construction practices and its experiences are readily available to others considering similar projects.

This compendium contains the research projects conducted to assess the performance of the Conservation Co-op and the degree to which the original goals of the project were met. The research reports contained herein document annual operating energy and water use, embodied energy, and water reclamation efforts. The Compendium is prefaced with a summary paper that documents all of the innovative aspects of the building and provides an overview of the projects successes and where improvements could be made. Further information is also available on the CMHC's web site www.cmhc-schl.gc.ca/research/highrise under the title Building Innovation.

Compiled by Duncan Hill, Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 2001.

AVAILABILITY : Canadian Housing Information Centre

ENVELOPE DRYING RATES EXPERIMENT: FINAL REPORT

The design and construction of building envelopes must be based on the assumption that some moisture will accumulate in the wall assembly, during construction and during the life of the building. Construction practices for multi-unit wood frame residential buildings in the coastal area of British Columbia, Canada are changing in response to a large number of envelope failures experienced in the period from 1985 to 1999. The new design approach includes the use of enhanced deflection and a drained cavity. While this approach will manage a large portion of the exterior moisture load, designs may also need to incorporate enhanced drying capabilities. A research program conducted at Forintek Canada Corp.'s western lab in Vancouver, Canada has evaluated the relative drying rates of wall assemblies under controlled laboratory conditions. The research ranks test wall panels in terms of their relative drying capacities, identifies potential wall locations at greater risk of slow drying (thus requiring enhanced material durability) and derives baseline data which can be used to improve parametric models of wall performance.

Results from the first group of 12 wall panels tested indicate that all the panels dried. There was a substantial range in drying rates, with ratios up to 3 times for comparable wall panels with and without a cavity. The major influences on drying rates were:

- The presence of a wide cavity (the 19 mm cavity performed better that either the 10 mm cavity or the 0 mm cavity)
- The choice of venting (top and bottom venting had a marginal improvement over venting at thebottom only)
- The choice of sheathing (plywood sheathed panels dried faster than OSB sheathed panels, partly because the plywood started out at a higher moisture content).

There was no clear indication that the choice of moisture barrier material had a substantial influence on drying.

The results of the test were compared to predictions made by CMHC's WALLDRY model. TheWALLDRY parametric model demonstrated good predictive capabilities in terms of overall drying trends.

The first EDRA test has set a "benchmark" drying rate of 1600 ng/pa.sec.m2 for the effective permeance of the 'best drying' panel in the test group.

Prepared on behalf of Forintek Canada Corp. by Don Halzleden, House Works Building Science Inc. Prepared for Canada Mortgage and Housing Corporation. CMHC Project Officers: Silvio Plescia and Mark Salerno. Ottawa: CMHC, 2001. 1 CD-ROM

AVAILABILITY : Canadian Housing Information Centre

HEALTHY HIGH-RISE : A GUIDE TO INNOVATION IN THE DESIGN AND CONSTRUCTION OF HIGH-RISE RESIDENTIAL BUILDINGS

This document is designed to reflect the innovation that can lead to the design and construction of better performing buildings. It provides:
-- an overview of many of the problems affecting high-rise buildings which result from conventional practices;
-- insight into an improved understanding of the building science principles; and
-- design considerations for improved building performance in a variety of areas.

The document is intended to present alternative ways of thinking about design principles for high-rise buildings, to provide some different approaches to design and construction, commissioning and operations and maintenance. In many cases, it presents the need for a more holistic and integrated approach to the design and construction of a high-rise residential building. Issues related to retrofit opportunities and regional differences are also discussed when they apply.

Opportunities are also discussed for improving the integration of high-rise residential buildings with the surrounding urban infrastructure, including on-site systems for energy and water supply, transportation and waste management. Finally each section includes "Sources of Information" to recent research and development studies. The guide is designed for architects and other building design professionals.

Prepared by: The Sheltair Group, Société Logique Inc., Paul Kernan, architect. Ottawa: Canada Mortgage and Housing Corporation, 2001. 153 pages.

Note: Aussi disponible en français sous le titre : Tours d'habitation saines

AVAILABILITY : CMHC Information Products *Order number: 62805*

INVESTIGATION PROTOCOL FOR EVALUATION OF POST-TENSIONED BUILDINGS

There is more than one billion square feet of concrete structures which utilize unbonded post-tensioned reinforcement in North America. In general, these buildings perform well provided that moisture access to the unbonded post-tensioned reinforcement is avoided. However, buildings constructed in this manner do require special evaluation techniques to avoid misdiagnosis that can lead to inappropriate, expensive, or unnecessary repairs. Alternatively, serious safety issues may be left undiscovered if the evaluation program fails to recognize the unique issues related to unbonded post-tensioning systems. The purpose of this document is to provide an understanding of the unique technical requirements for investigation and maintenance of buildings with unbonded tendons. It is intended that this document be a guide for owners, property managers, and others with an interest in real estate, to develop consistent standards and expectations for the assessment and maintenance of unbonded post-tensioned structures.

Prepared by John Harder, David Rogowsky, and Anast Demitt. CMHC Project Officer: Silvio Plescia. Ottawa: Canada Mortgage and Housing Corporation, 2002. (External Research Program Research Report) 46 pages

AVAILABILITY : Canadian Housing Information Centre

MONITORING THE PERFORMANCE OF AN EIFS RETROFIT ON A 15 STOREY APARTMENT BUILDING

Morrison Hershfield Limited was retained by Canada Mortgage and Housing Corporation to monitor the performance of the rehabilitation of a 15-storey, 112-unit apartment complex located in Toronto. A major phase of the rehabilitation involved installation of exterior insulation and finish system (EIFS) rainscreen cladding over the existing brick masonry walls. The monitoring program included analysis of temperature, moisture content and air pressure measured at five locations over a winter season.

The original wall construction was clay brick masonry with concrete block backup, expanded polystyrene insulation, and plaster interior finish. The EIFS cladding consisted of acrylic stucco lamina installed over expanded polystyrene insulation that was adhered to the brick masonry using a trowel-on, proprietary material. The trowel-on material was intended to function as the air barrier and drainage plane. Vertical channels, which were located on the interior face of the insulation, were intended to drain rainwater that penetrated to the coating through drain blocks located every 5 stories.

The project objectives were:

1. To document the development of a building envelope retrofit strategy for a residential high rise building.
2. To monitor, assess and document the performance of a residential high rise building envelope retrofit.
3. To assess the degree to which the monitoring protocol can be implemented as part of regular operation and maintenance activities for new and existing buildings.
4. To assess the potential for the development of a commercially viable, building envelope performance monitoring protocol.

The objective of the monitoring program was to establish the performance of the retrofit wall with respect to heat, air and moisture control.

Prepared by Morrison Hershfield Limited. CMHC Project Officer: Duncan Hill. Ottawa: Canada Mortgage and Housing Corporation, 2000. (70 pages)

AVAILABILITY : Canadian Housing Information Centre

PERFORMANCE MONITORING OF A BRICK VENEER/STEEL STUD WALL SYSTEM: PHASE 4 RESULTS: REVISION 1

The Brick veneer/steel stud (BV/SS) wall system has become very popular over the last 20 years, however, the rapid adoption of this wall system has preceded the development of adequate design and construction standards. This situation has led to concerns regarding the long term safety, serviceability and durability of BV/SS wall systems. Therefore, Canada Mortgage and Housing Corporation (CMHC) has been evaluating BV/SS wall systems over the past several years by commissioning studies by various consultants, including Keller Engineering Associates Inc. (KEA).

Phase 4 of this study by KEA involved a fourth year (in 1996 and 1997) of in-situ performance monitoring of a BV/SS wall system, with respect to air and moisture movements as well as temperature gradients. In an attempt to improve venting of the wall cavity, vent holes were cut into every second vertical mortar joint in the top course of the monitored brick veneer section. The performance of a test wall was monitored using various temperature, moisture and air pressure sensors that were connected to an automatic data logging system. Even though the BV/SS wall system is typical of current practices and workmanship was mostly satisfactory, the results of the study demonstrate that performance problems exist that may lead to significant distress over the long term. The more serious performance problems identified in this study are mainly due to design weaknesses, illustrating the need for improved design and construction standards.

Prepared by Keller Engineering Associates Inc. CMHC Project Officer: Jacques Rousseau. Ottawa: Canada Mortgage and Housing Corporation, December 1999. (69 pages)

AVAILABILITY : Canadian Housing Information Centre

QUALITY ASSURANCE PROTOCOL TEST DRIVE

"Quality by Design" was commissioned as the Quality Assurance Protocol by Canada Mortgage and Housing Corporation in order to establish a management system for the assurance of quality of the exterior of multi-storey wood frame buildings located in the coastal climate of British Columbia. This is part of the initiatives undertaken by the Building Envelope Research Consortium, of which CMHC is a member, to address the "leaky condo" issue as it pertains to new construction. A Quality Assurance Protocol is a set of recommendations and guidelines which, if followed, will assure an improved level of quality in design, construction and maintenance.

The original "Quality by Design" was published in January 1999. This current edition has been refined extensively based upon ongoing input from a wide variety of sources, and in particular, the document has been refined based upon applying it to a real project.

Prepared by Pro Pacific Architecture Limited. Principal investigators for the project were Brian Palmquist and William A. Gies, assisted by quality systems consultant Arc Rajtar. The "test drive" revisions were prepared by Brain Palmquist. CMHC Project Officers: Jacques Rousseau and Mark Salerno. Ottawa: Canada Mortgage and Housing Corporation, c2000.

AVAILABILITY : Canadian Housing Information Centre

RAIN PENETRATION CONTROL: APPLYING CURRENT KNOWLEDGE

Water is the most significant factor in the premature deterioration of buildings. It can damage some materials directly and reduce the effectiveness of insulation. It is the major factor in the corrosion of metals, the chemical breakdown of many organic materials and the growth of mold and rot. Controlling water penetration, as well as its location, duration and phase (vapour, liquid or solid), is often the most critical factor in achieving long-term performance of a building envelope assembly.

This document focuses primarily on rain penetration control in walls and windows. Other wetting mechanisms include condensation and exposure to ground water. Moisture can be removed from a building assembly through drainage, by diffusion or venting (convective air change) to a drier indoor or outdoor environment. Most building assemblies and materials have some tolerance for infrequent and short duration wetting. Some infrequent passage of water to the inside is a minor inconvenience rather than a disaster. Determining how much effort and expense can be justified to minimize water penetration or evaluating what assembly types are appropriate for a particular building application and location is an exercise in judgment and risk management.

Following a discussion of several approaches to water penetration control in walls, including architectural design, there is a detailed explanation of the rain-screen principle and its application to contemporary buildings. Designers are further challenged to incorporate the Pressure Equalized Rain-screen (PER) principles. The PER system uses compartment seals to divide the cavity into a series of chambers in addition to the elements of a simple rainscreen. This limits lateral air flow in the cavity and increases pressure equalization, ultimately reducing the amount of water entering the interior wall. Remarkably, in pressure equalized rainscreen walls or joints, leakage is reduced by making bigger holes in the outside surface. This is counterintuitive.

To help design rainscreen curtain walls CMHC developed the "RainScreen" software. It allows designers to vary the parameters of their rain screen system and graphically see the resulting dynamic pressure distribution on cladding and air barrier (backpan) layers. Its mathematical engine is based on the CMHC report "Rainscreen" by Jacques Rousseau. "RainScreen 2.1" adds many new features and an easy GUI interface, using either Windows (3.1 or 95) or Macintosh systems. The "RainScreen v2.1" software may be downloaded free from CMHC at: ftp://ftp.cmhc-schl.gc.ca/highrise/rainscreen .html.

Ottawa: Canada Mortgage and Housing Corporation, 2001, c1999.

AVAILABILITY : Canadian Housing Information Centre

HIGH-RISE AND MULTIPLE UNIT CONSTRUCTION

REPAIR AND RETROFIT CASE STUDIES FOR MULTI-UNIT RESIDENTIAL BUILDINGS

CMHC is documenting repair and retrofit activities in multi-unit residential buildings. The first 30 case studies, available on our web site under the title: "Better Buildings", document building characteristics, the type of problems that prompted the repairs and retrofits, costs, benefits, etc. A wide range of case studies are included to reflect regional repair and retrofit priorities. The studies are useful for other members of the multi-unit residential building industry to refer to when considering similar projects.

AVAILABILITY : Available on CMHC's web site:
http://www.cmhc-schl.gc.ca/en/burema/himu/bebufa/bebufa_021.cfm

STUDY OF HIGH-RISE ENVELOPE PERFORMANCE IN THE COASTAL CLIMATE OF BRITISH COLUMBIA

In recent years, there have been significant efforts to understand and resolve moisture ingress and deterioration problems associated with wood-framed, low-rise building construction. Currently, this problem is acute in some wood-frame condominiums in the Lower Mainland of British Columbia. There are indications that the high-rise stock may also be experiencing similar moisture problems. The objective of this project was to examine the files of a sample of thirty-five buildings to identify causal relationships that have resulted in building envelope problems and successes in non-combustible high-rise residential buildings in the coastal climate of lower mainland BC. This was done by correlating building envelope performance with sources of moisture, and features of design and construction of assemblies and details. The project did not estimate the extent of a potential problem. The project focused specifically on envelope details and envelope systems that have failed, rather than building failures. Envelope types and components under review included window/wall assemblies and light-gauge steel stud (back-up) wall assemblies with stucco, masonry and EIFS cladding systems. Project funding has been provided by Canada Mortgage and Housing Corporation in partnership with the Homeowner Protection Office, the City of Vancouver, the EIFS Council of Canada and Vancouver Condominium Services Ltd.

Prepared by RDH Building Engineering Limited. CMHC Project Officers: Mark Salerno, Silvio Plescia. Ottawa: Canada Mortgage and Housing Corporation, 2001. 1 CD-ROM

NOTE: No. 02-120 in the Research Highlights Technical Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

HOME OWNERSHIP

HOMEOWNERSHIP EDUCATION AND COUNSELLING: AN EXAMINATION OF U.S. EXPERIENCE AND ITS RELEVANCE FOR CANADA

The purpose of this research project was to examine the American experience with a view to identifying ways of enhancing affordable, sustainable access to homeownership in Canada. In carrying out the U.S. segment of this research, in addition to conducting a literature review, a survey of homeowner education and counseling (HEC) providers and participants was conducted together with follow-up interviews. For the Canadian portion of the research, a broad range of housing and community organizations (180 in total) were surveyed and follow-up interviews conducted in order to develop a portrait of existing homeownership access support services in Canada.

The first part of the report provides a comprehensive summary and evaluation of the HEC experience in the U.S. Following a synopsis of the historical evolution of HEC, the report outlines the characteristics of HEC programs, services and delivery agencies; responses from HEC industry participants surveyed; how HEC is funded as well as recent developments affecting the HEC industry; specifically the establishment of the American Homeowner Education and Counseling Institute (AHECI), the increased focus on standardizing program content and delivery as well as the certification of HEC providers. Next, the report describes the role that HEC has had in addressing credit, affordability, psychological, cultural and linguistic access barriers to homeownership and is followed with a summary of the statistical studies, research and anecdotal evidence assessing the efficacy of HEC both in facilitating access to homeownership as well as in mitigating mortgage loan default risk. This section of the report concludes by summarizing the results of the US HEC industry expert survey in such areas as: the future of HEC and its key factors of success; why industry leaders are so interested in HEC; and outlines respondents' comments on introducing HEC-type initiatives elsewhere.

The second part of the report examines the access support services and delivery structures existing in Canada to help households access homeownership. It examines information and/or access gaps which indicate the need for enhancing homeowner education and counseling efforts in Canada. The results of a national survey examining the nature, scope and operation of existing homebuyer education and counseling efforts in Canada are then presented followed by an assessment of the differences between what is offered in the U.S. vis-a-vis Canada in addressing access barriers to homeownership. The section of the report concludes by examining whether the gaps in services available in Canada might be filled by introducing HEC-style initiatives that draw on best practices used in the U.S. under the auspices of a housing sector-driven public-private partnership arrangement

Prepared by Hirshhorn Consulting Inc. and George McCarthy. Prepared for Research Division, Canada Mortgage and Housing Corporation. CMHC Project Officer: David Metzak. Ottawa: CMHC, 2000 (Housing Affordability and Finance Series) (162 pages)

Order number: 62173

NOTE 1: Aussi disponible en français sous le titre : Services de formation et de consultation pour l'accession à la propriété : examen de l'expérience américaine et de sa pertinence pour le Canada (PF 0435)

NOTE 2: No. 68 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : CMHC Information Products

METHODS USED ABROAD TO SUPPORT ACCESS TO HOMEOWNERSHIP: A RESEARCH SURVEY: FINAL REPORT

This report examines the possibility that one or more measures adapted by governments or industry in other countries in recent years has the potential to improve access to homeownership in Canada. Although every country is, in some respects, unique in the way that housing and accommodation are produced and delivered, there are broad similarities between Canada and a number of other advanced market economies: notably Australia, Britain, France, Germany, New Zealand, and the United States. This report focuses specifically on measures (programs, policies, or practices) employed or contemplated in these six nations over the past decade by governments and the private sector. The report asks whether these measures have the potential to improve access to homeownership in Canada, or extend the benefits of homeownership to under served portions of our population. This report does not consider innovations in residential construction itself (e.g. , land subdivision and planning, construction technology and building codes, or house design) as these are subjects of other studies. This report will be of interest to the construction and renovation industry, the real estate sector, mortgage lenders and insurers as well as public sector housing policy analysts.

Prepared by John R. Miron with contributions by Axel Borsch-Supan, Donald R. Haurin, Patric H. Hendershott, Anne Laferrère, John MacCormick, John N. J. Muellbauer, Marion Steele, and Judith Yates. CMHC Project Officer: David Metzak. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 2001. 147 pages

AVAILABILITY : Canadian Housing Information Centre

TECHNICAL ASPECTS OF SELLING NEW HOMES

The purpose of this initiative was to support a project being managed by the Professional Home Builders Institute of Alberta (PHBIA) which was to develop a 12 to 18 hour interactive CD ROM course on "The Technical Aspects of Selling New Homes". The CD ROM course is based on two existing courses and includes video clips, audio, graphics, text, self-tests and optional exams. The information contained in the CD ROM is beneficial to home builders' new home sales staff, and to real estate sales agents who are involved in selling new homes. Also. new home buyers can take the course to raise their awareness of the home buying process. The CD ROM can be used as an ongoing reference.

AVAILABILITY : CD-ROM is available from the Professional Home Builders Institute of Alberta at (403) 216-8310 or by e-mail at phbia@phbia.com

HOMELESSNESS

CHILDREN AND YOUTH IN HOMELESS FAMILIES: SHELTER SPACES AND SERVICES

"Children and Youth in Homeless Families: Shelter Spaces and Services" provides a snapshot of how local communities across Canada meet the needs of homeless children and youth and their parents or guardians.

This research study involved a review of existing data and literature and two surveys of Canadian shelters. After the first screening survey, the second survey was administered to 112 shelters from large urban areas in most regions of the country.

While the findings may not be statistically representative of geographical regions or type of shelter, they highlight many interesting facts about the homeless children and youth who live in shelters with their families. For example, at the time of the study, over half of the children and youth were under the age of five, and problems with self-esteem and a sense of well-being were common. Not surprisingly, the families who used the shelters had no earned income and many relied on social assistance to meet their everyday needs.

The survey also examined the availability and adequacy of the shelters and their services. Overcrowding was a common problem, while the ability to provide facilities and services such as study areas, indoor and outdoor recreation areas, child care and counseling for children and youth depended on the type of shelter. More family violence shelters than general emergency or municipal shelters provided these facilities and services to their clientele.

The availability of services for parents such as job training, employment searches and on-site medical or legal services was also low in the general emergency shelters but higher in the family violence shelters and municipal programs.

The survey also asks where do homeless families go when they leave the shelters? The results indicate that most moved to their own apartment or house, while a much smaller number moved to another shelter, a rooming house or motel, or stayed with friends or moved to another city. Only a very small percentage lived on the streets.

Most of the families needed financial assistance and affordable housing to ensure a stable household for their children and youth. They also required counseling in life skills, child care and training and employment skills. Different shelters employed various strategies to meet these needs, ranging from home visits and follow-ups to help with budgeting and advocacy.

These are just a few of the insights obtained by this research study. But further research is recommended to provide a comprehensive inventory of the number, size and location of all the shelters serving homeless families with children and youth, and the types of services they provide. Also recommended for further study is an investigation of the health and long-term emotional effects that living in an emergency shelter has on children and youth.

Ottawa: Canada Mortgage and Housing Corporation, 2000. 117 pages

NOTE: No. 80 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

ENVIRONMENTAL SCAN ON YOUTH HOMELESSNESS

This report is a comprehensive examination of youth homelessness across Canada. It provides an overview of the homeless youth population, including their shelter situation; the primary housing and support issues related to homeless youth; and the types of effective housing and service interventions that have benefited this need group. It focuses primarily on youth between 16 and 24 years of age, is national in scope and provides detailed information about youth homelessness in every province, the Northwest Territories, Yukon and Nunavut.

The Scan was researched in two steps. The first step was a review of the existing Canadian literature on youth homelessness and the preparation of an annotated bibliography. The second step consisted of interviews with close to 60 key informants across the country , including representatives from all levels of government and front-line community agencies.

The Scan provides an overview of the initiatives to address youth homelessness that are happening at national, provincial or local levels and identifies a number of expanded and additional programs and services that could help alleviate youth homelessness. They include more affordable housing, and a range of additional housing options such as emergency shelters, transition housing and supported housing. There is growing interest in programs that offer youth a full range of housing choices linked with support programs, such as life skills and pre-employment training.

Other suggestions for supporting homeless youth include improved access to income assistance, access to the child welfare system for 16 year olds, more mental health services, treatment for addictions, alternative schooling options and initiatives to help youth find jobs. Family mediation, conflict resolution, strategies to help youth remain in school, more recreation centres, and more support to families and children are also recommended as part of the continuum of supports for helping homeless youth.

Prepared by Deborah Kraus, Margaret Eberle and Luba Serge. CMHC Project Officer: Jim Zamprelli. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 2001.

NOTE: No. 86 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

EVALUATING HOUSING STABILITY FOR PEOPLE WITH SERIOUS MENTAL ILLNESS AT RISK FOR HOMELESSNESS: FINAL REPORT

This report describes the development of a Housing Stability Benchmark Evaluation Procedure by the Community Support and Research Unit (CSRU) at the Centre for Addiction and Mental Health. Housing stability for people with serious mental illness (SMI) at risk of homelessness is a concept that has remained under-developed in the research literature. This project began by convening a Housing Stability Steering Committee. A primary task of the steering committee was to work with the CSRU study team to develop a model of housing stability. In addition, a scan of the published and non-published research and program evaluation literature was conducted to identify the factors at various levels that are associated with better housing outcomes for people with SMI.

Based on the model and findings from the scan of the literature, and working with the steering committee, a table of housing stability objectives, benchmark practices and monitoring strategies was developed. In addition, a series of data collection tools were created to complete a housing stability master data sheet. The tools are used to collect information about a housing program's practices. Once entered into a master data sheet, the program's practices are compared to housing stability benchmark practices. This comparison leads to the development of action plans to improve current program practices. The tools developed for this project were pilot-tested with three housing programs in Toronto representing custodial, supportive and supported housing models.

Prepared by Community Support and Research Unit, Centre for Addiction and Mental Health. Prepared for Research Division, Canada Mortgage and Housing Corporation. CMHC Project Officer: Anna Lenk. Ottawa: CMHC, 2001. 206 pages

NOTE: No. 100 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

HOMELESS INDIVIDUALS AND FAMILIES INFORMATION SYSTEM (HIFIS)

In order to help shelters and municipalities develop useful and comparable information on homeless people, in 1995 CMHC began a program of research to develop the Homeless Individuals and Families Information System (HIFIS) as a user-friendly software application. HIFIS was designed by and for shelters throughout the country to meet their administrative operating requirements while at the same time collecting information that will provide quality data on homeless shelter clients. Municipalities will also benefit greatly from the use of HIFIS. By identifying the number and characteristics of homeless people served in shelters in their jurisdiction, many municipalities will, for the first time, gain a basic understanding of the homeless population in their region. As a result, local governments will be able to better plan, monitor and evaluate policies and programs designed to reduce the problem of homelessness.

In 2000, CMHC pilot tested the software in over 100 shelters in 8 of Canada's largest municipalities located all across Canada. After almost six years of research and development, CMHC has now passed the HIFIS system over to the National Secretariat on Homelessness to take it from being a pilot tested software to being an operational system with support available across Canada. HRDC intends that HIFIS assist local agencies throughout the country.

AVAILABILITY : No report is available from this project

HOMELESSNESS

INVOLVING HOMELESS AND FORMERLY HOMELESS CLIENTS IN PROJECTS AND PROGRAMS TO ADDRESS HOMELESSNESS: FINAL REPORT

This report is based on a study of the ways in which agencies that address homelessness involve their homeless clients in the work of the agency itself, through participation in governance structures, development of policies, work (both volunteer and paid), research and evaluation, building design and development, creative activities, community projects and training/mentorship activities.

The study examined the involvement approaches of twelve agencies in different locations across Canada. The agencies were selected to achieve good regional representation, as well as in terms of the services and programs provided and the characteristics of the homeless population served. Agencies providing services to adult women and men, youth, families and First Nations people were studied in Halifax, Fredericton, Trois-Rivières, Montréal, Toronto, Hamilton, Winnipeg, Regina, Calgary, Edmonton, Vancouver, and Victoria. The types of services provided include emergency shelter, drop-ins, supported housing, newsletter production, education/training, and counselling.

At each of the twelve sites, interviews and group discussions were conducted with management and front line staff and homeless clients of the particular agency. The final report examines the successes, pitfalls and future challenges of involving clients.

Prepared by Jim Ward Associates. Funded jointly by Canada Mortgage and Housing Corporation and the National Secretariat on Homelessness. CMHC Project Officer: Jim Zamprelli. Ottawa: CMHC, October 2001. 63 pages

NOTE: No. 98 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

HOUSE CONSTRUCTION

ALTERNATIVE WALL SYSTEMS FOR LOW-RISE RESIDENTIAL CONSTRUCTION

The purpose of this study was to research ten alternative wall systems for low-rise housing in use today. These systems included insulated concrete forms, straw bale, structural insulated panels, stack wall, concrete block, post and beam, log, earth construction, manufactured wood, and lightweight steel. The results of this study will be beneficial to those in the industry to help them make better informed decisions on choices between alternative systems. This study investigated the differences, benefits and limitations of the various building systems which are currently in use as compared to the typical wood-frame, stick-built construction of low-rise housing. It considered the benefits and drawbacks of the various systems. The study examined a number of the factors to be considered by a builder or homeowner to help them understand the differences between the available system choices so they may evaluate and select systems appropriate to their clients, house designs, trade practices and skills, and regions. The study included reviews by industry representatives.

Prepared by Sun Ridge Group. CMHC Project Officer: Darrel Smith. Ottawa: Canada Mortgage and Housing Corporation, 2002. (Housing Technology Series) 112 pages

NOTE 1: No. 02-132 in the Research Highlights Technical Series summarizes the results of this research and is available on the CMHC web site.

NOTE 2: Aussi disponible en français sous le titre : Variantes de murs

AVAILABILITY : CMHC Information Products

BUILDING ENVELOPE SOLUTIONS - THEORY AND PRACTICE

This was a partnership project between the Canadian Home Builder's Association of British Columbia (CHBA/BC), the Homeowner Protection Office (HPO) of B.C. and CMHC. The purpose of the project, previously called "Builders ToolBox", was to develop materials which would be used to train general contractors and subtrades in building construction practices that would enable them to construct highly durable building envelopes for new residential wood-frame buildings located in the lower mainland of British Columbia and Vancouver Island and to restore and upgrade the envelopes of existing buildings. The end product is a manual divided into 11 modules: Introduction; Building Science; Results of Survey of Buildings in the Lower Mainland; Condensation Control in Wall Assemblies; Rain Penetration Control in Wall Assemblies; Sheathing, Sheathing Membranes, Claddings and Flashings; Windows and Doors; Roofs, Decks, Walkways and Balconies; New Construction of the Building Envelope; Restoration of the Building Envelope; and Regulatory Requirements and Standards. The material can be tailored to meet the various needs of the residential construction industry in B.C. The course is currently being offered by the British Columbia Institute of Technology.

AVAILABILITY : Seminar/training is available

CANADA'S CONSTRUCTION SYSTEM. ABOUT YOUR HOUSE; CE42

The purpose of this fact sheet is to foster understanding of the elements of the system of construction, and operation of buildings and houses in Canada. The fact sheet outlines the systems to help determine what should be built, systems for quality control, systems to improve business and technical knowledge, systems to allocate responsibility, systems for recourse, systems to respond to problems and systems for keeping up to date.

Ottawa: Canada Mortgage and Housing Corporation, 2002. 8 pages

Order number: 62966

Note : Aussi disponible en français sous le titre : Système de construction Canadien

AVAILABILITY : CMHC Information Products and on the CMHC web site

CD-ROM VERSION OF THE CANADIAN WOOD-FRAME HOUSE CONSTRUCTION

The purpose of this project was to design and develop a CD-ROM version of CMHC's Canadian Wood-Frame House Construction (CWFHC) publication complete with a number of multimedia enhancements and other special features such as video clips, animations and 4D illustrations. The CD ROM includes a number of "calculators" to help the user determine the specified snow loads for specific locations across Canada, and to select proper beam and joist sizes and spacings. It also includes the Glossary of Housing Terms with links to and from the text and illustrations in the Canadian Wood-Frame House Construction, to serve as an illustrated glossary. Other features of this product are:

- It is a web-based interactive CD-ROM;
- A full-text search engine allows the user to search for any term;
- Planning ahead and checking back notes appear throughout the text with links to illustrations and video footage;
- It is based on the National Building Codes; and
- It contains 144 high quality illustrations that can be optimized for printing.

The CD ROM is now available separately or packaged with a hard copy of the CWFHC.

Order number for CD-ROM only: 62237	Price: $64.95 + GST and handling charges
Order number for CD-ROM and Guide: 62234	Price: $84.95 + GST and handling charges

By purchasing the CD-ROM + Guide package:

You will save $5.00 off the price of purchasing them separately; and have the guide as a handy on-site référence. For clients who wish to demo the product, they may call to receive a copy of the Canadian Wood-Frame House Construction demo CD-ROM.

AVAILABILITY : CMHC Information Products

FEASIBILITY STUDY: DEVELOPING A GUIDE FOR ENGINEERED WOOD I-JOIST FLOOR SYSTEMS

The purpose of this project was to confirm the need for and determine the feasibility of producing a generic guide for builders on the selection and proper installation of engineered wood I-joist floor systems. Overall, there was strong support from the various stakeholders for the development of a generic I-joist guide. The strongest support came from building officials across the country. Building officials see the guide as something that could inform not only the framing crews but also the sub-trades who occasionally damage the products. I-joist manufacturers support the development of a guide, however, they do not think it should include performance aspects such as spans and floor load tables. According to builders, the guide should contain as many details as possible, but at minimum details on nailing patterns for double joists, rim joists, stair openings, flue box, and cantilevers. Based on stakeholder input, the guide should cover:

- general I-joist information;
- special design and installation considerations;
- generic details;
- proper use of framing hardware and blocking; and
- storage and handling recommendations.

CMHC is considering the development of this guide. Potential interested partners will be approached.

Prepared by Buchan, Lawton, Parent Ltd. CMHC Project Officer: Darrel R. Smith. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 2001. 76 pages

AVAILABILITY : Canadian Housing Information Centre

FEASIBILITY STUDY ON THE DEVELOPMENT OF A COMMISSIONING GUIDE FOR NEW HOUSES

The purpose of this project was to assess the importance and determine the feasibility of developing a commissioning guide for builders and buyers of new houses. The research indicated that generally home builders do not currently carry out a whole house commissioning and do not have a protocol to do so. However with houses becoming more complex, there is greater need to have a competent person investigate the whole house and all its systems to ensure they are installed and functioning as originally designed before delivery to the buyer. To be effective and useful, the commissioning guide must be simple to use and yet comprehensive. It must not add significantly to the cost of the house. Commissioning should not be a duplication of services already in place. The guide should include a review of the installation and operation of all major components and systems of the house. The study found that the benefits of the house commissioning process are that:

- houses perform better;

- homeowners are assured the house is built as expected according to the plans and specifications and the components and systems have been installed and are functioning properly;
- homeowners are better informed about the systems in their houses and how they work (resulting in less call backs for contractors); and
- potential problems are identified before damage occurs (also resulting in less call backs for contractors and reduced costs for warranty programs).

The study identified a need and found interest by clients and stakeholders in the development of a commissioning guide. As a result, CMHC is considering the development of a commissioning guide.

Prepared by Buchan, Lawton, Parent Ltd. Prepared for Canada Mortgage and Housing Corporation. CMHC Project Officer: Darrel Smith. Ottawa: Buchan, Lawton, Parent Ltd., 2001. ca. 100 pages

AVAILABILITY : On an interlibrary loan basis from: Canadian Housing Information Centre

WOOD USAGE IN STRAW BALE HOUSE CONSTRUCTION

This is another in a series of small projects assessing the acceptability of straw bale walls for housing. The contractor totaled the wood used during the construction of his load-bearing, straw bale building, and then compared it to a simulated, conventional building of the same size and design. In this simple design, without interior partitions, the straw building used over 45% less wood than the corresponding conventional house. This study uses the straw bale building type that is most likely to show an advantage. For straw bale houses using post and beam construction, or having significant interior framing, wood savings would be much reduced.

Research Contractor: Scott Pegg, Eco-Way Living Group Inc. CMHC Project Officer: Don Fugler. Ottawa: Canada Mortgage and Housing Corporation, 2002. (Research Highlights; Technical Series; 02-116) 2 pages

NOTE : Aussi disponible en français sous le titre : L'utilisation de bois dans la construction de maisons en ballots de paille

AVAILABILITY : CMHC Information Products and available on the CMHC web site

HOUSE CONSTRUCTION INDUSTRY

PRODUCTIVITY TRENDS IN THE CONSTRUCTION SECTOR IN CANADA: A CASE OF LAGGING TECHNICAL PROGRESS

The objective of this report is to provide a detailed examination of productivity trends in the construction industry in Canada, with particular reference to residential construction, in order to shed light on the lagging productivity in the sector.

Both labour and total factor productivity growth in the total and residential construction sectors in Canada have been negative over the past two decades. This report provides a detailed examination of output, employment, and productivity trends in the construction sector in Canada and by province, with particular attention to the residential construction sector. It puts forth a number of variables to explain these trends and tests these explanations in a regression model. In addition, the report looks at other potential explanatory factors for which time series are not available, with particular reference to measurement issues and technical change; discusses the micro- and macro-economic environment affecting productivity performance in the construction sector; examines the prospects for productivity growth in the construction sector; and makes a number of recommendations for future work. The major conclusion is that lagging technical progress appears to lie at the root of the construction sector's poor productivity performance. In addition, measurement problems have also likely contributed to the poor measured productivity performance in the sector.

Final Report prepared by the Centre for the Study of Living Standards. CMHC Project Officer: Eric Tsang. Ottawa: Canada Mortgage and Housing Corporation, 2001. ca 350 pages

AVAILABILITY : On a loan basis only from: Canadian Housing Information Centre

SKILL SHORTAGES IN THE RESIDENTIAL CONSTRUCTION INDUSTRY

This paper looks at why labour shortages arise and persist, the possible consequences of labour shortages, the tools available to manage labour supply and demand, policy implications and future research requirements.

Rev. edition. Prepared by Morley Gunderson, MKG Associates. CMHC Project Officer: David D'Amour. Ottawa: Canada Mortgage and Housing Corporation, 2001. 125 pages

NOTE: No. 76 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

TECHNOLOGY DISSEMINATION: TRIGGERING INNOVATION ADOPTION IN CANADA'S HOME CONSTRUCTION INDUSTRY

Cost saving technologies are often slow to be adopted in Canadian house construction. This may partly be due in part to most contractors having limited abilities to undertake research and evaluation, and develop the competency to use such advances. The goal of this External Research Program work was to devise an information dissemination technique which focuses on the process of innovation introduction rather than the innovations themselves. It is felt that by "reasonably demonstrating" the value of various innovations to subcontractors, there will subsequently be a "natural" spread to other projects as the subcontractors utilize their newly acquired cost-effective techniques to gain a competitive advantage. The work includes a discussion of a literature review and the identification and selection of innovation technologies. This project report will be of interest to researchers, builders and developers who wish to integrate new and improved building process onto the mainstream of the construction industry.

Prepared by B. Ian Bazley. CMHC Project Officer: Thomas Green. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 2001. (External Research Program Report) 113 pages

AVAILABILITY : Canadian Housing Information Centre

HOUSING

DISINVESTMENT AND THE DECLINE OF URBAN NEIGHBORHOODS

Disinvestment and decline occur in inner city neighbourhoods throughout North America. The process is often associated with poverty, high levels of crime, conversion of single family to multi-family housing units, abandonment of the housing stock, and out-migration (movement of the middle class from inner city neighbourhoods to the suburbs). Other features of neighbourhood disinvestment and decline are mortgage redlining, exit of retail business, conversion to lower forms of non-residential land uses such as marginal business operations and specialized services for the poor, decline in relative or absolute land values, and in migration by economically marginalized populations.

This research examined the processes of urban disinvestment and decline with four objectives:
-- to develop an understanding of forces and factors that trigger and accelerate decline;
-- to create a framework for action that can stem and reverse decline;
-- to examine the role of investment in housing as a primer of regeneration; and
-- to identify opportunities for concrete action involving partnerships.

The research aims to inform the development of public policy, primarily at the local and municipal levels, by articulating a range of policies that can work to prevent or reverse inner city decline.

The research comprises four main sources of information: a literature review, key informant interviews in six cities, group interviews in two cities, and analysis of Statistics Canada data. Together, the case studies: examine the extent to which the experience of the six selected cities conforms to the literature; identify the range of responses to urban decline being implemented in the Canadian context and evaluate them; and identify best practices in urban revitalization and renewal.

Ottawa: Canada Mortgage and Housing Corporation, 2001. (Research Highlight: Socio-Economic Series; 90). 6 pages Order number: 62512

NOTE : Aussi disponible en français sous le titre : Le désinvestissement et le déclin des quartiers en milieu urbain

AVAILABILITY : CMHC Information Products and available on the CMHC web site

HOUSING IN CANADA (HIC) CD-ROM DATA BASE

CMHC has developed an electronic CD data base called Housing In Canada (HIC) which provides housing interest groups with direct hands-on access to comprehensive data on households and housing conditions using CMHC's custom 1996 housing conditions indicators data derived from the 1996 Census and comparing it with data from the 1991 Census. The data base enables groups to have the hands-on capability to examine how and why housing conditions are changing.

HIC presents key demographic and socioeconomic data (e.g. household type, income, age, gender and period of immigration) matched to comprehensive housing data (e.g. dwelling type, age and condition; tenure, shelter cost, suitability, affordability and the existence and depth of housing need). HIC employs today's recognized standards for housing suitability, adequacy and affordability to facilitate the assessment of the state of Canada's housing.

The software profiles most of Canada's households: non-farm, non-Native; non-farm, Native off-reserve; Native on-reserve; and farm households. HIC includes aggregated data for: Census Metropolitan Areas (CMAs) and main sub-divisions (CSDs); Regional Municipalities; residual non-CMA urban and urban areas; and provinces, territories and Canada. The data provided focuses on 1996, but provides comparison data for 1991 to enable users to identify the direction and extent of recent changes in a community's housing.

The bilingual 20/20 software (included) is available in the form of easily manageable CD-ROM disks; for each province and territory, and for each census metropolitan area (CMA). Each provincial/territorial CD-ROM contains Canada level data on it to provide context for all analyses. Similarly, each CMA CD-ROM contains two sets of all CMA average data for comparison; one set for the province in which the CMA is located and the other for all of Canada.

AVAILABILITY : Further information on HIC is available from CMHC's web site: http://www.cmhc-schl.gc.ca/mkrinfo/housingincanada.html

HOUSING

IDENTIFICATION OF KNOWLEDGE GAPS IN DISASTER INFORMATION FOR HOUSEHOLDERS IN CANADA: FINAL REPORT

This short survey project assembled and reviewed existing housing information related to 'disasters' to assess if and where additional research may be required. The review concentrated on housing and housing issues. This research investigates information prepared for householders by organizations in Canada, the United States, Britain, Australia and France. Material was collected and analyzed for the following fifteen threats: avalanches; cold waves; drought; earthquakes; forest fires; house fires; flooding; hail; heat waves; landslides/mudslides; multiple coverage; power outages; tornadoes, torrential rain; and winter storms. The report assesses the suitability of the information for the intended audience and identifies gaps in the current consumer information.

Prepared by John Newton. Prepared for Canada Mortgage and Housing Corporation. CMHC Project Officer: Don Fugler. Toronto: John Newton Associates, 2001. 82 pages

AVAILABILITY : On an interlibrary loan basis from: Canadian Housing Information Centre

HOUSING AFFORDABILITY

AFFORDABLE HOUSING ADVISOR

This project will assemble an electronic database of strategies and ideas that have been successfully used to improve housing affordability for inclusion on CMHC's Web site. These strategies will appear under categories of activity such as: Policy and Regulation; Housing and Community Design; Construction and Technology; Operations and Management; and Redevelopment. Each strategy will be explained and illustrated with example projects. When completed, it is intended that the database will be accessible through the CMHC Web site and will be fully searchable and linked to relevant sources of information of the strategies and examples. The sources will include CMHC reports, publications by other organizations and individuals and Web sites of public, non-profit and non-government organizations.

AVAILABILITY : Product is available on the web

AFFORDABLE HOUSING IN VANCOUVER FOR PEOPLE LIVING WITH HIV/AIDS = DES LOGEMENTS ABORDABLES À VANCOUVER POUR LES PERSONNES VIVANT AVEC LE VIH/SIDA

Wings Housing Society opened the Bonaventure, an affordable housing project for persons living with HIV and AIDS, on January 21, 1999. This project took less than one year from conception to ribbon snipping. The speed at which this project was brought on stream reflects the housing crisis being faced by hundreds of Vancouver residents living with HIV disease. The Bonaventure provides housing for 57 people in roomy, affordable apartments located adjacent to some of the country's best clinical and social support services. This report chronicles the conception and implementation of the Bonaventure project and highlights the use of innovative renovation of existing historic buildings with unusually high density allowances as a way to provide affordability, choice and quality housing to some of Canada's most marginalized individuals.

Case study written by Katherine Taylor, Options Consulting, Wings Housing Society. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 2001. (Affordability and Choice Today (ACT) Demonstration Project. ACT Case Study) 35 pages

AVAILABILITY : CMHC Information Products *Order number: 62340*

COCHRANE, ALBERTA, COMMUNITY-BASED AFFORDABLE HOUSING INITIATIVE, PLANNING AND ENGINEERING SERVICES DEPARTMENT, TOWN OF COCHRANE, ALBERTA = INITIATIVE DE LOGEMENTS À PRIX ABORDABLE DE LA VILLE DE COCHRANE (ALBERTA), SERVICE DE L'URBANISME ET DU GÉNIE, VILLE DE COCHRANE (ALBERTA)

The objective of this project was to develop affordable housing policies that could be incorporated into the town of Cochrane, Alberta, Land Use Bylaw and to develop a set of guidelines for implementation of the policies by town planners in conjunction with the development industry.

The Cochrane Town Council amended its Land Use Bylaw to
- allow accessory (secondary) suites and garden suites;
- increase densities in all residential zoning categories;
- to create a new zoning category for multiples taller than four storeys; and the Town Council adopted a replacement Municipal Development Plan that incorporated new policies that addressed requirements for housing choice availability.

By the summer of 1999, Cochrane was seeing positive results from the affordable housing project and the resultant regulatory reforms.

Case study written by: Word-Works Communications Services. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 2000. (Affordability and Choice Today (A.C.T.) Regulatory Reform Project; ACT Case Study) 48 pages

AVAILABILITY : CMHC Information Products *Order number: 62000*

GUIDE TO DEVELOPING A MUNICIPAL AFFORDABLE HOUSING STRATEGY

A municipal affordable housing strategy is a systematic approach to addressing local housing issues. It provides the community with an opportunity to discuss housing in its broad social development context and reach a consensus (or at least a widely -supported decision) on what should be done in order to ensure that housing needs are being met. By undertaking a municipal affordable housing strategy, the community can inventory the available resources for dealing with housing issues, weigh the broad range of actions open to them, assign responsibility for action to municipal and community based agencies and identify those actions and policy changes that they will demand from senior levels of government. An affordable housing strategy is developed with public consultation throughout the process.

The purpose of this guidebook is to give municipalities interested in adopting an affordable housing strategy a detailed account of how to go about doing so. The chapters in the Guidebook are arranged along functional lines, meaning that different aspects of the strategy development process are described as separate topics. These functional topics are:
- preparation and administrative set-up
- assess affordable housing needs
- planning and conducting a public participation process
- developing action plans
- implementing the strategy
- building partnerships
- monitoring and evaluation of outcomes

Prepared by Ray Tomalty, Anna Hercz, and Christine Warne. CMHC Project Officer: Fanis Grammenos. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 2001. 85 pages

NOTE: No. 89 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site

AVAILABILITY : Canadian Housing Information Centre

HOUSING AFFORDABILITY

PHILANTHROPIC SUPPORT FOR AFFORDABLE HOUSING: FINAL REPORT

This research project is aimed at providing sponsors of affordable housing with a detailed situational analysis background overview of the philanthropic sector. The study includes an overview of the financial economics associated with producing affordable housing in Canada; an examination of the charitable sector and donor community; and a look at the tax implications of donations to charities and non profit organizations. The report describes the nature, characteristics and regional variations in charitable giving in Canada; sources of charitable donations and funding levels as well as alternative fund raising methods used to solicit financial support. This component of the research also provides an overview of the nature, size and characteristics of the donor community in Canada and presents practical insights into the size, nature, geographic distribution and related factors impacting donations from individual Canadians, the corporate community and foundations. Sixteen case studies are used to illustrate how affordable housing sponsors have been able to obtain philanthropic support for creating affordable housing projects.

Prepared by Manifest Communications Inc. in association with Steve Pomeroy, Focus Consulting and François Lagarde. CMHC Project Officer: David Metzak. Ottawa: Canada Mortgage and Housing Corporation, 2000. (Housing Affordability and Finance Series) ix, 134 pages.

Order Number: 62146

NOTE 1: Aussi disponible en français sous le titre : Appui des organisations philanthropiques à la production de logements abordables (PF 0436)

NOTE 2: No. 67 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : CMHC Information Products

HOUSING AND IMMIGRATION

HOUSING CHOICE AND ADAPTABILITY FOR AFRICAN REFUGEES: THE CANADIAN AFRICAN NEWCOMER AID CENTRE, TORONTO (ONTARIO) = CHOIX ET ADAPTABILITÉ DES LOGEMENTS DESTINÉS AUX RÉFUGIÉS AFRICAINS : THE CANADIAN AFRICAN NEWCOMER AID CENTRE, TORONTO (ONTARIO)

This report describes the work of the Canadian African Newcomer Aid Society of Toronto (CANACT), to develop an adaptable housing model for refugees which would take into consideration the unique needs of refugees, including the changes likely to occur in family size and composition through family reunification. Formally called "Housing Choice and Adaptability for Refugees", the project was undertaken in cooperation with Toronto's Department of Housing and the Department of Planning and Development. The project set out to:

- consult with African refugees to determine their present and future housing needs;
- translate these needs into design guidelines;
- identify regulatory issues relevant to the creation of such housing; and
- acquire land and build a demonstration project of 16 units.

Although the CANACT project never achieved its ultimate goal of actually building homes or developing a viable ownership model, it produced a blueprint that other housing providers can use to develop their own housing projects for new immigrants and refugees. The City of Toronto's study of the zoning implications of CANACT's design guidelines can also be useful to other municipalities as it identifies the kind of permitted use categories needed to accommodate the housing needs of African refugees and newcomers.

Case study written by: Word-Works Communications Services. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 1999. (Affordability and Choice Today (A.C.T.) Regulatory Reform Project; ACT Case Study)

AVAILABILITY : CMHC Information Products *Order Number: 61993*

HOUSING AND TAXATION

EVALUATION OF HOUSING TAXATION MEASURES

This report evaluates income tax and GST measures affecting the housing industry based on the principles of taxation: effectiveness, efficiency, equity, affordability and integrity.

In addition to reviewing the principles of taxation, the report discusses recent trends in tax policy, the rationale for the current treatment of income from property (which includes rental income) vis-à-vis income from a business, the conceptual basis for providing tax preferences, and real estate as a tax shelter, and presents a profile of the participants in the housing sector.

The discussion of the housing measures outlines the implications, rationale and history of each measure. The Department of Finance distinguishes between activities which are "active" and those which are "passive" in nature. The fundamental conceptual issue throughout the report is the different treatment of rental property income (passive income) and income from a business (active income). Ceteris paribus, passive income bears a higher tax burden than active income, which benefits from tax preferences not available to passive income. The housing industry has argued for tax preferences for rental income and rental properties similar to those available to business income and business properties.

Based on the evaluation of principles, all existing tax measures are deemed to have largely attained the effectiveness and equity principles. Certain deficiencies are noted with respect to the efficiency principle. Several measures are considered to have partially attained the affordability principle, primarily because they reduce the quantum of re-investment funds available to the rental property owner.

Prepared by F.B. Gorman & Associates Limited. CMHC Project Officer: Eric Tsang. Ottawa: Canada Mortgage and Housing Corporation, 2002. 143 pages

NOTE: No. 106 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

TAXATION OF RESIDENTIAL PROPERTY IN CANADA

The system of taxation in Canada has become increasingly complex over the past several decades. Taxes include federal, provincial and municipal, or local, taxes. The federal government levies personal and corporate income taxes, other corporate taxes like payroll and capital taxes, a value-added tax (the Goods and Services Tax), and excise taxes. The provincial governments also collect personal and corporate income taxes, but generally follow the rules set out by the federal government. Provincial governments also levy sales taxes or participate in the federal value-added tax and collect taxes such as land transfer taxes. Local governments generally only collect property taxes and certain fees.

Many of these taxes affect the production, ownership and use of housing, and decisions surrounding these functions. This report sets out and explains tax provisions relating to housing providers, owners and renters. Section 2 presents the taxation of producers (e.g., home builders and multiple-unit residential builders.) Section 3 identifies the taxation of owners of rental housing (e.g., corporations – both principal business corporations and not, real estate investment trusts, and individuals). Finally, section 4 discusses the taxation of the occupant individuals of owned and rented housing. Section 5 summarizes the criteria, methodology, and possible research questions that could be explored, with particular focus on the taxation of the providers of rental housing. By presenting the tax provisions by economic function, rather than by taxation type, the focus is comparisons across alternative forms that these economic activities take, as well as providing a better framework to analyze the impact of the tax provisions on housing-related economic activities.

Prepared by Kenneth J. Klassen and Stanley N. Laiken. Prepared for Canada Mortgage and Housing Corporation. CMHC Project Officer: Eric Tsang. Ottawa: CMHC, 2001. 66 pages

NOTE : Aussi disponible en français sous le titre : Imposition des immeubles résidentiels au Canada

AVAILABILITY : Canadian Housing Information Centre

HOUSING DESIGN

FLEXHOUSING FEATURES COST COMPARISONS - IN A BENCHMARK HOUSE DESIGN

Flex housing is affordable, adaptable and accessible housing. It takes extra planning time, but the pay-off is a comfortable home that will satisfy the occupants' changing needs over its lifetime. This project shows the breakdown of costs involved in building with many of the FlexHouse options, as well as the cost to renovate an existing house to give it those qualities. Costs were determined in Saskatoon in 2002.

No. 109 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : CMHC Information Products and on the CMHC web site

MONTRÉAL: A RICH TRADITION IN MEDIUM-DENSITY HOUSING

This report presents facts, findings and new hypotheses on the origins and evolution of Montréal's housing tradition which developed primarily during the 19th century. The local "plex" building typology is identified:

- first as a multi-family structure sheltering from two to six dwellings, each with through access from the front to the rear of the buildings;
- second as a housing type adapted to a dominant rental market;
- thirdly as a thoroughly urban built form, laid out in rows of two to four storeys, marking an intermediate building type between the "dwelling house" and the "tenement".

These three characteristics produced a medium-density housing environment which today provides sought-after urban dwellings known for their flexibility in adapting to different household types, needs and means. It also presents a sensible example of urban dwelling between the single-family house and high-rise towers. The report proposes new hypotheses on the sustaining historical conditions underlying the development of the "plex" and the influences on its built form, a practical tale of the transfer and contribution of French and Scottish housing patterns in Canada.

HOUSING DESIGN

Prepared by David B. Hanna and François Dufaux. CMHC Project Officer: Brian Eames. Ottawa: Canada Mortgage and Housing Corporation, 2002 (External Research Program Research Report) 187 pages

AVAILABILITY : Canadian Housing Information Centre

QUANTIFYING UNIVERSAL DESIGN: A PROGRAM FOR IMPLEMENTATION

This research project was to identify methods to acquire the pragmatic information needed to further the principles of universal design. These principles of flexibility, ease of use, etc. were validated with some modifications. As in previous research, the concepts inherent in universal design were seen as critical, appropriate and useful to create more inclusive environments.

The methodology for this project featured a literature search, the preparation of a discussion paper, and a meeting with people with diverse expertise discussing questions related to develop methods for collecting and organizing information to promote universal design.

The literature review found that most current dimensional information fails to meet criteria developed from a universal design perspective. In particular, people with disabilities, people 65 years and older, children, and pregnant women were under-represented in the samples and in the types of dimensional information available. As well, the information that was available was usually presented as separate from the 'general population' rather than integrated into inclusive databases.

The final report includes a summary of the meeting discussions with a description of a proposed methodology, discussion of resources needed to implement such research projects, and the organization of a database. The appendices include a glossary, the background discussion paper with a literature review synthesis, and the list of consultants.

A report of a workshop, October 13-14, 2001, Winnipeg, Manitoba. Researched and prepared by F. G. Consortium, Gail Finkel & Yhetta Gold in collaboration with Betty Havens, Juliette Cooper. Ottawa: Canada Mortgage and Housing Corporation, 2001. (External Research Program Research Report) 54 pages

AVAILABILITY : Canadian Housing Information Centre

HOUSING EXPORT OPPORTUNITIES

CANADA POLAND RESIDENTIAL REAL ESTATE INVESTMENT MODEL: AN EVALUATION OF POLAND'S RESIDENTIAL REAL ESTATE MARKET: SUMMARY

This evaluation of Poland's residential real estate market provides information on the following:

- An economic overview and foreign investment regulations
- Residential construction and the property market
- The legal framework for a housing financing system
- Development prospects and an investment model
- Construction permits, the Polish standardization system, and custom duties
- Types of housing systems preferred by Polish consumers
- Business practices and useful contacts.

Ottawa: Canada Mortgage and Housing Corporation, Canadian Housing Export Centre, 2001. 21 pages.

Note: Publié aussi en français sous le titre : Étude de marché dans le secteur de l'immobilier résidentiel

AVAILABILITY : Canadian Housing Information Centre

FACILITATING THE PENETRATION OF CANADIAN COMPANIES INTO THE CHILEAN HOUSING SECTOR: EXECUTIVE SUMMARY

The main purpose of this study is to provide an efficient tool for the penetration of Canadian companies into the Chilean housing sector. This document compiled, analyzed, identified and took note of the best strategies and prospects for successful entry of Canadian prefabricated housing and construction products.

The main objectives of this market study are:

- To describe the Chilean industrialized housing sector
- To identify opportunities for Canadian exporters of these types of housing units
- To identify actual and future real estate development projects where CMHC member companies could participate
- To propose market penetration strategies for each of the main Canadian construction products and the prefab housing sector.

Prepared by Faraggi & Satler S.A. Ottawa: Canada Mortgage and Housing Corporation, 2001. 27 pages

NOTE: Publié aussi en français sous le titre : Favoriser l'implantation des entreprises canadiennes au sein du secteur chilien de l'habitation

AVAILABILITY : Canadian Housing Information Centre and available in PDF file on CMHC's Web site. To download this document visit CMHC's Web site at : http://www.cmhc-schl.gc.ca/en/homadoin/excaprex/repu/repu_012.cfm

GUIDE TO THE RULES UNDER THE NORTH AMERICAN FREE TRADE AGREEMENT AND U.S. IMMIGRATION LAW FOR CANADIAN COMPANIES IN THE HOUSING, RENOVATION AND RESIDENTIAL CONSTRUCTION SECTOR

This guide outlines the procedures as well as the criteria for those currently engaged in residential renovation, manufactured housing production, and the construction of on-site residential homes that must be met for those seeking temporary entry to the United States under the North American Free Trade Agreement (NAFTA) and U.S. immigration law. This guide is intended to provide general information about the NAFTA and U.S. immigration rules and regulations. Questions most asked by Canadian new home builders, manufacturers and renovators are included as a preamble to the guide.

Ottawa: Canadian Home Builders' Association, Canadian Manufactured Housing Institute with the assistance of Canada Mortgage and Housing Corporation, 2000. vi, 28 pages

AVAILABILITY : Canadian Home Builders' Association

HOUSING AND BUILDING MARKET IN CHILE, CHINA, GERMANY, JAPAN, KOREA, POLAND, UNITED KINGDOM

For each of the countries listed above, this report provides the following information:

- quick facts on the country;
- characteristics of its housing and building products market;
- building technology standards;
- building codes and standards;
- information on the business environment, domestic and foreign competition, market entry strategies and specific business opportunities;
- key contacts, events, references, and internet sources of information.

Prepared for Canada Mortgage and Housing Corporation. Prepared by Department of Foreign Affairs and International Trade. Ottawa: Canada Mortgage and Housing Corporation, 2001.

Publié aussi en français sous le titre : Le marché du logement et de la construction en : Allemagne, Chili, Chine, Corée, Japon, Pologne, Royaume-Uni

AVAILABILITY : Canadian Housing Information Centre

INVESTIGATION OF CO-VENTURES AND EXPORT POTENTIAL FOR BUILDING PRODUCTS AND MATERIALS RELATED TO SUSTAINABLE DEVELOPMENT IN CHINA

The purpose of this project is to explore the opportunities that exist in China for co-ventures and the export of Canadian products, technology and materials related to sustainable development to lower the impact on the natural environment and/or promoting a healthy indoor environment.

AVAILABILITY : Canadian Housing Export Centre

PENETRATION OF THE MULTIPLE HOUSING SECTOR IN THE UNITED STATES

This document is intended to be used as a reference tool by prime contractors and trade contractors alike working in the contractual construction industry and who envision expanding their business into the United States. The purpose of this study is to identify the ten American metropolitan regions that offer the highest potential concerning residential real estate, particularly apartment complexes, and the ten metropolitan regions of the eastern United States that offer the highest potential for non-residential real estate. The study also outlines the methods used by the current exporters to bypass any barriers to entry.

Prepared by Claire Piché and Samir Abboud of COPRIM. Prepared for Canadian Housing Export Centre, Canada Mortgage and Housing Corporation and Association de la construction du Québec. CMHC Project Officer: Carol M. Kerley. Ottawa: CMHC, 2000.

NOTE : Aussi disponible en français sous le titre : Pénétration du secteur de l'habitation multiple aux États-Unis

AVAILABILITY : Canadian Housing Information Centre and available in PDF file on CMHC's Web site. To download this document visit CMHC's Web site at : http://www.cmhc-schl.gc.ca/en/homadoin/excaprex/repu/repu_001.cfm

PREFABRICATED HOUSING IN SWEDEN AND FINLAND

This trip was organized as part of the Forintek/Concordia collaborative project aimed at identifying issues and trends affecting the prefabricated industry sector. The Scandinavian countries and Finland are recognized for their expertise with the prefabrication of building products. Similarly to Canada, Sweden and Finland rely on abundant forest resources, have small internal markets and are net exporters of prefabricated homes to other countries.

During this trip the authors visited five prefab manufacturing plants, one equipment manufacturer, a construction exhibition, a home construction site, one university, and two research institutes involved with the industry of prefabricated systems in Sweden and Finland. The objective of this trip was to study practices followed by the industry of prefabricated building systems in the two countries and investigate the type of research activities undertaken by the research institutions to support this industry sector. This report summarizes the key findings of the plant visits and interviews with researchers.

Prepared by Paul Fazio and Louis Poliquin. Ottawa: Canada Mortgage and Housing Corporation, 2002, c2000. 56 pages

Note : Aussi disponible en français sous le titre : Habitations préfabriquées en Suède et en Finlande

AVAILABILITY : Canadian Housing Information Centre

RESEARCH STUDY ON THE HOUSING MARKET IN THE UNITED KINGDOM

This report describes the housing market in the United Kingdom, providing an overview of the market, statistics on newly built housing, and information on its housing technology. It covers the major challenges facing UK housing and outlines the building technology and standards environment. The final section deals with the key issues concerning imported housing and products to the UK, trading relationships, and recommended market entry strategies for Canadian housing companies. A typical performance specification for timber frame use in the UK is included.

Ottawa: Canadian Housing Export Centre, Canada Mortgage and Housing Corporation, 2000. 52 pages

NOTE : Aussi disponible en français sous le titre : Étude sur le marché de l'habitation au Royaume-Uni

AVAILABILITY : Canadian Housing Information Centre

STUDY ON U.S. RENOVATION MARKET

This study covers recent changes, trends, and opportunities for the renovation market in the United States. It includes an overview of the market, forecasts and detailed lists of the top American remodeling companies, independent lumber yards and home centres, leading retailing chains, home improvement product retailing headquarters, wholesaling cooperatives, distributors, representatives and agents.

Prepared by The Starr Group Inc. Prepared for Canadian Housing Export Centre, Canada Mortgage and Housing Corporation. CMHC Project Officer: Carol M. Kerley. Ottawa: CMHC, c1999.

NOTE : Aussi disponible en français sous le titre : Étude sur le marché de la renovation aux États-Unis

AVAILABILITY : Canadian Housing Information Centre

TIPS ON THE SELLING IN THE U.S. GREEN HOUSING MARKET

Do you have a housing system or building product that reduces environmental impacts or contributes to occupant health and safety? There may be a market for you in the United States.

Housing markets in the United States are increasingly adopting a build green strategy to give consumers what they want. Canada Mortgage and Housing Corporation (CMHC) prepared this booklet to help you tap into those markets. The booklet provides a definition of green building, outlines basic steps to take to learn about the U.S. green housing market, and includes a listing of green building programs. It covers distributors and retailers, directories and product certification, conferences and events, key contacts and other marketing considerations.

Ottawa: Canada Mortgage and Housing Corporation, 2002. 36 pages

Order number: 62870

NOTE : Publié aussi en français sous le titre : Conseils pour vendre dans le marché de la construction écologique aux États-Unis

AVAILABILITY : CMHC Information Products and on CMHC's web site

HOUSING EXPORT OPPORTUNITIES

TRENDS AND CHANGES IN JAPANESE BUILDING REGULATIONS

To facilitate the development of export strategies for the Japanese housing market, this report provides information on new government regulation in Japan and the effect of these regulations on imported housing. The report provides an in-depth assessment of the four key issues driving the sweeping changes taking place in Japan's housing industry: Revised Building Standard Law, mandatory 10 year product warranties, Housing Quality Assurance Law (HQAL), and new Government Housing and Loan Corporation (GHLC) criteria.

Prepared by David Cohen and Christopher Gaston. Ottawa: Canada Mortgage and Housing Corporation, c2001. 43 pages.

NOTE : Aussi disponible en français sous le titre : Tendances et changements au niveau des règlements de construction japonais

AVAILABILITY : Available in PDF file on CMHC's Web site. To download this 43 page document visit CMHC's Web site at
http://www.cmhc-schl.gc.ca/en/homadoin/excaprex/repu/repu_010.cfm

TRENDS IN THE JAPANESE HOUSING MARKET

Japan is one of the world's largest housing markets. Canada is a leading exporter of building materials and services to Japan and has actively promoted the use of Canadian housing systems through a variety of initiatives. Imports of housing, however, comprise only a small proportion of total Japanese housing activity so the potential to expand this market share presents attractive opportunities for Canadian housing producers and suppliers. This report provides
1. an overview of recent trends in the Japanese housing market and housing imports;
2. an assessment of market opportunities for Canadian housing companies in Japan; and
3. identifies a number of potential market niches including:-- large-scale wooden buildings;-- exterior finishes on buildings in quasi-fire protection areas;-- energy-efficient and healthy housing;-- housing for the elderly; and-- the renovation market.

Prepared by Greg Lampert Economic Consultant and Shin Ikehata, Cyber Builders International Inc. Prepared for Canadian Housing Export Centre, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1999, c2000. 66 pages

NOTE : Aussi disponible en français sous le titre : Tendances du marché de l'habitation japonais

AVAILABILITY : Canadian Housing Information Centre and available in PDF file on CMHC's Web site. To download this document visit CMHC's Web site at :
http://www.cmhc-schl.gc.ca/en/homadoin/excaprex/repu/repu_001.cfm

HOUSING FORECASTING AND DEMAND

DEMOGRAPHIC CHANGES AND REAL HOUSING PRICES IN CANADA

With the aging of the baby-boom generation, the number of young households is falling in Canada. This study examines the contentions of the demographer David Foot, and of earlier work by Mankiw and Weil, that in such a population, the number of home buyers is bound to decrease, causing the prices of residential real estate to drop substantially. In addition to reviewing the relevant economic literature, it constructs econometric models using Canadian national and provincial data and uses them to assess whether expected demographic changes in Canada are likely to trigger a pronounced downward trend in residential real estate prices.The study concludes that even if it is true that demographics may exert downward pressure on real estate prices, such impact will probably be dominant only in certain regions, depending even there on their rates of growth in real income. In other regions, the real price should have a tendency to rise.

Prepared by Mario Fortin and André Leclerc. Prepared for Research Division, Canada Mortgage and Housing Corporation. CMHC Project Officer: Ian Melzer. Ottawa: CMHC, 1999, c2000. (Housing Affordability and Finance Series) 142 pages

Order Number: 62152

NOTE 1: Aussi disponible en français sous le titre : Les changements démographiques et le prix réel des logements au Canada

NOTE 2: No. 62 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : CMHC Information Products

HOUSING RESEARCH

DIRECTED RESEARCH EVALUATION REPORT

This study investigated the economic benefits of the Directed Research (DR) and related information transfer of the Canada Mortgage and Housing Corporation (CMHC). The intent was to determine whether there is a positive economic return to Canadian society from CMHC's investment in the DR. This study was commissioned in response to a Treasury Board request for a further evaluation of CMHC's research, information and communications function following a 1994 evaluation study. The 1994 evaluation concluded that DR was relevant and produced high quality and useful research. The current study builds on that earlier evaluation by seeking to quantify the benefits of CMHC's DR. It does not include analysis of other CMHC research: e.g., for market analysis and export development, or CMHC's Responsive Research Programs (the External Research Program and the Housing Awards Program).

This study used a partial benefit/cost (B/C) methodology that compared the benefits of a small number of research areas expected to have large net benefits to the total costs of CMHC DR. An iterative process was used to identify cases in which the benefits were likely to be large, the benefits could be quantified in dollar terms, there was a discrete set of uses and users for the research results, the impacts could be clearly attributed to use of the research results or participation in the research, and CMHC's DR had a significant role in creating the impacts. Four cases of research impacts were investigated in detail, and five other cases were also examined at the study design stage. The four cases for which net benefits were estimated were British Columbia wood-frame moisture damage, brick veneer steel studs, mandatory fire sprinklers, and northern water microsystems.

The findings indicate that CMHC's DR will likely provide significant benefits to Canada over the next several decades, and represent a positive return from CMHC's housing research.

Prepared by KPMG Consulting LLP for Audit and Evaluation Services. Ottawa: Canada Mortgage and Housing Corporation, November 2001. 36 pages

NOTE : Aussi disponible en français sous le titre : Rapport d'évaluation de l'activité de recherche commandée

AVAILABILITY : Product is available on the web

ACHIEVING HEALTHY INDOOR ENVIRONMENTS: A REVIEW OF CANADIAN OPTIONS

There is convincing evidence that poor indoor air quality (IAQ) is damaging people's health. It has been linked to increases in asthma, allergies and multiple chemical sensitivities. In fact, the United States Environmental Protection Agency has rated poor IAQ as being among the top environmental risks to human health.

With funding from Canada Mortgage and Housing Corporation and five other project sponsors -- Venmar Ventilation Inc., NIKE Inc., Health Canada, Interface Flooring Systems (Canada) Inc. and Lever Pond's -- Pollution Probe has produced a report bringing together, for the first time, components of the indoor environment issue previously treated separately. This report looks at strategies for encouraging voluntary initiatives, best practices in the field, legal aspects of IAQ, and the market for indoor environmental products and services.

The report is organized into four parts. The first part briefly outlines why progress has been slow on resolving indoor environment issues, identifies key elements of effective indoor voluntary initiatives and describes a new strategy of "Maximum Voluntary Initiatives." The second part of the report provides an in-depth review of twenty voluntary initiative case studies. The third part of the report provides a summary of the legal aspects of IAQ. The fourth part of the report contains an overview of the Canadian indoor environment industries, including the identification of market drivers and key barriers to future industry development. This section contains recommendations for supporting local suppliers of products and services to the indoor environment.

Each part of the report recommends options for creating healthier indoor environments in Canada. At the core of the recommendations, and of the ideas reflected in the report, is the need for a comprehensive strategy to address the indoor environment issues in Canada.

Prepared by Ian Morton of Pollution Probe and Jay Kassirer of Cullbridge Marketing and Communications. Toronto: Pollution Probe, n.d. 230 pages.

NOTE: No. 02-105 in the Research Highlights Technical Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Final report is published and distributed by Pollution Probe Foundation (416) 926-1907. Research Highlight is available on the CMHC web site and from CMHC Information Products

DEFINING THE CONVECTIVE DRIVING FORCE FOR SOIL GAS INTRUSION INTO HOUSES: FINAL REPORT

The objective of this project was to evaluate soil gas pressures surrounding building envelopes, taking into account the role of geological variability, surface covers, and other environmental factors. The data gathered will be used to predict soil gas flux into houses and its effects on indoor air quality.

The project was carried out in two phases. In the first phase, soil gas pressures around and across the basement envelope were monitored at five different sites for a minimum period of six weeks. Houses at two of the five sites did show high soil gas pressures developing under certain climatic conditions. Following this work, a new mathematical model was developed to augment the current models in the literature. The new model was aimed at defining the rate of soil gas influx in situations where variations in the stratigraphy could cause increased convective transport. The computer model developed for this project was able to simulate soil gas entry.

Prepared by adomait Environmental Solutions. CMHC Project Officer: Don Fugler. Ottawa: Canada Mortgage and Housing Corporation, 2001. (External Research Program Research Report) 137 pages

AVAILABILITY : Canadian Housing Information Centre

HEALTHY INDOORS: ACHIEVING HEALTHY INDOOR ENVIRONMENTS IN CANADA

Many indoor environments in Canada were just as polluted in 2001 as they were 30 years earlier, despite numerous conferences and reports on the subject since the 1970s. Several leading US authorities, Canada Mortgage and Housing Corporation, and others have consistently identified indoor pollution as posing one of the most serious health risks.

The situation in Canada has developed largely because there are no clear structures or national strategies for addressing indoor environments. In contrast to outdoor environment issues, government policy on indoor environments is limited and fragmented.

To address this issue, Pollution Probe launched "Healthy Indoors" in cooperation with a wide range of government, non-government and industry stakeholders. "Healthy Indoors" includes 12 sponsors and 30 supporting partners interested in developing a collaborative and comprehensive multi-stakeholder strategy for creating and maintaining healthier buildings in Canada between 2002 and 2020.

This final report is a compilation of a multi-year effort to develop and implement a strategy for creating healthier indoor environments in Canada. Specifically, the report identifies 15 action items that form the basis of a strategic direction for achieving healthy indoor environments in residential, commercial and institutional settings. The report presents the rationale for each action item; provides an implementation plan; identifies the players; proposes timing; indicates who is responsible for monitoring; and states how performance will be reported. The linchpin of the recommended actions and the ideas contained in the report is the need for an indoor environment secretariat to advocate on behalf of, coordinate activities for, monitor, and expand the number of organizations and individuals working for health indoor environments in Canada.

Prepared by Ian Morton of Pollution Probe and Jay Kassirer of Cullbridge Marketing and Communications. Toronto: Pollution Probe, 2002. 49 pages

NOTE: No. 02-125 in the Research Highlights Technical Series summarizes the results of this research and is available on the CMHC web site

AVAILABILITY : Final report is published and distributed by Pollution Probe Foundation (416) 926-1907. Research Highlight is available on the CMHC web site and from CMHC Information Products

POUSSIÈRE DOMESTIQUE : UN OUTIL EFFICACE ET ABORDABLE D'ÉVALUATION DE SALUBRITÉ MICROBIENNE RÉSIDENTIELLE : RAPPORT FINAL

In the Greater Montréal area, in 2000 and 2001, the microbial content of the dust of 68 "healthy" homes with no water damage and no occupant health symptoms was compared to that of 145 "unhealthy" homes with major water damage. The average mould counts are seven times higher than in the unhealthy homes. The distribution of mould in healthy homes, with a predominance of genera like Cladosporium and Alternaria, differs from that in unhealthy homes, with genera such as Penicillium and Aspergillus. These results show that the mould content of the dust in a home is an indicator of its degree of microbial health.

Prepared by Marie-France Pinard, Laboratoire MICROVITAL. Prepared for Canada Mortgage and Housing Corporation. CMHC Project Officer: Ken Ruest. Ottawa: CMHC, 2002. (External Research Program) ca. 29 pages

AVAILABILITY : Canadian Housing Information Centre

INDOOR ENVIRONMENT

STUDY OF DISPLACEMENT VENTILATION SYSTEMS FOR RESIDENTIAL HOUSES WITH RADIANT FLOOR HEATING SYSTEMS

It is estimated that about 1% of Canadians are environmentally hypersensitive. These people suffer partial to total debilitation. Some of them require a home environment that is as free as possible from air-borne contaminants. Designing and constructing such houses are hampered by the lack of practical guidelines both for selecting suitable building materials and furnishings, and for designing and installing effective ventilation systems. The Canada Mortgage and Housing Corporation has recently designed and constructed a prototype house for environmentally hypersensitive individuals. It includes a range of features to help to achieve an acceptable indoor environment for these people at a minimal cost. These features include the use of commercially available low emission building materials and easily cleanable interior finishing, and a specially designed displacement ventilation system.

A joint project was established between the Canada Mortgage and Housing Corporation and the Institute for Research in Construction to assess the performance of the displacement ventilation system installed in this prototype house. This report presents the results of this evaluation.

The results will help to develop guidelines for designing and constructing suitable and affordable housing for environmentally hypersensitive individuals. Some of the measures used in this prototype house may also be adopted in new and existing houses to improve indoor air quality.

Prepared by J.S. Zhang, R.J. Magee and C.Y. Shaw of the National Research Council of Canada. Ottawa: Canada Mortgage and Housing Corporation, 2001. 26 pages

AVAILABILITY : Canadian Housing Information Centre

MANUFACTURED HOUSING

LAND USE ISSUES IMPEDING AFFORDABLE HOUSING WITH MOBILE HOMES

This project report is a land use study focusing on the legislative barriers to manufactured housing. This project was divided into three phases and a final report. Phase 1 reviews and compares Canadian and American manufactured housing legislation, regulatory barriers and government and industry approaches to these barriers. Phase 2, analyzes the Canadian manufactured housing industry, identifies the major issues, suggests how the American model may apply, and recommends how the existing legislative barriers can be addressed. Phase 3, focuses on municipal regulations and includes a survey of Ontario municipalities and a survey of municipal solicitors regarding zoning discrimination. The final report contains all three phases and an action plan, which sets out direction and strategy for addressing legislative barriers that negatively affect manufactured housing development in Canada at all levels of government.

Prepared by Ron Corbett. CMHC Project Officer: Doug Pollard. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 2001. 146 pages

AVAILABILITY : Canadian Housing Information Centre

MANUFACTURED HOUSING CONSULTANTS' TRAINING PROGRAM - PHASE II

This was a partnership project between the Canadian Manufactured Housing Institute (CMHI), the Provincial Manufactured Housing Associations of B.C., Alberta and Saskatchewan, Ontario and Atlantic Canada, and CMHC. The purpose of this project was to build on and improve the two day Manufactured Housing Consultants' Training Program and to ready it for ongoing delivery at the provincial level. The training program, which was developed under Phase I, covers a broad overview of the many aspects of the manufactured housing sales function. Topics include product and process knowledge, such as factory construction, zoning regulations, siting options, and transportation and installation procedures. Under Phase II, the participant's manual and the trainer's material were revised to incorporate improvements resulting from the pilot program, and new additional information such as: information for modular retailers, participants workbook, and marketing and promotional materials. These changes were necessary to ensure a high level of quality, effectiveness and consistency of the course delivery by the various provincial industry associations. This work has been completed and a number of courses have been offered with outstanding success. The program is being delivered through a partnership arrangement with provincial associations/organizations and is open to all representatives of the manufactured housing industry in Canada.

AVAILABILITY : Seminar/training is available

MANUFACTURED HOUSING: UPDATING AND REWRITING LOCAL REGULATIONS: REGIONAL DISTRICT OF NORTH OKANAGAN = L'HABITATION USINÉE : MISE À JOUR ET RÉÉCRITURE DES RÈGLEMENTS LOCAUX : DISTRICT RÉGIONAL DE NORTH OKANAGAN

The purpose of this project, sponsored by B.C.'s Regional District of North Okanagan (RDNO), was to end discrimination against manufactured housing and encourage its parity with site-built homes. In the RDNO, officials recognized the need for more affordable housing within the jurisdiction and wanted to promote and encourage alternative housing forms. They realized their out of date regulations governing manufactured housing were part of the problem. This project examined the regulatory environment for manufactured housing in the Regional District of North Okanagan, in south central British Columbia. As a result, the RDNO and one of its incorporated townships adopted regulations making it easier for this type of housing to flourish. It proposed solutions, that if adopted Canada-wide would put manufactured housing on an equal regulatory footing with site-built homes. The adopted RDNO Manufactured Home Community Bylaw is included as an appendix in this ACT case study.

Case study written by: Word-Works Communications Services. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 2000. (Affordability and Choice Today (A.C.T.) Regulatory Reform Project; ACT Case Study)

Order Number: 61425

AVAILABILITY : CMHC Information Products

CONDOMINIUM OWNERS' GUIDE TO MOLD. ABOUT YOUR HOUSE; CE36

This eight page fact sheet is designed to teach condominium owners and occupants how to recognize mold and how to take action against mold. It describes what molds are, what makes them grow and why molds are a concern. It covers when and how to seek professional help, steps to follow in cleaning up small mold areas, and how to deal with an ongoing problem. In addition, it lists basic steps to prevent mold and reduce mold growth and provides answers to the most frequently asked questions about mold.

Ottawa: Canada Mortgage and Housing Corporation, 2001. (About Your House; CE36) 8 pages

NOTE : Aussi disponible en français sous le titre : Guide sur la moisissure à l'intention des copropriétaires; Votre maison; CF36

AVAILABILITY : CMHC Information Products and available on CMHC's Web site. To download this document visit CMHC's Web site at: http://www.cmhc-schl.gc.ca/en/burema/gesein/abhose/index.cfm

GUIDELINES FOR ON-SITE MEASUREMENT OF MOISTURE IN WOOD BUILDING MATERIALS

Builders, inspectors and engineers undertaking moisture measurements on site in many instances do not possess the necessary background for using or interpreting moisture meter readings from wood and wood-based products. Because judgement is also needed in their interpretation, this document has been prepared to provide both detailed instructions and background information to assist persons involved in these endeavours. The objective of this report is to assist those not fully informed in wood moisture measurement technology and to provide general guidance with respect to measuring wood moisture content in field conditions. The document outlines the types of available moisture meters, a process of how to take moisture readings, where to take moisture readings and how the moisture readings are corrected for temperature and wood species. In addition, the document will provide a general discussion about steps builders and designers can take to minimize construction complications due to moisture.

Prepared by Forintek Canada Corp. Sponsored by Canada Mortgage and Housing Corporation and Canadian Wood Council. Ottawa: CMHC, c2001. 1 CD-ROM

AVAILABILITY : Canadian Housing Information Centre

MOLD IN HOUSING: AN INFORMATION KIT FOR FIRST NATIONS COMMUNITIES

The information in this kit will assist First Nations communities to recognize when there is a mold problem and to take the necessary steps to deal with the problem. This kit is intended for:

- technical service providers (inspectors);
- First Nations housing departments -- housing coordinators and maintenance staff;
- bands -- band managers, housing providers;
- health providers -- community health nurses/representatives and environmental health officers;
- occupants; and
- trades -- builders, contractors and renovators.

Mold is a widespread and common problem in houses anywhere, both in and outside First Nations communities. It can be a minor nuisance or it can have major effects on the occupants.

Mold in houses does not happen overnight. The solutions are also not immediate. A strategy needs to be adopted that includes responding to existing situations, preventing future problems and planning new construction. The responsibilities of the key players and their training needs are identified in this kit.

MOISTURE AND MOLD

The first part of this kit (chapters 1 to 5) is basic information. It is written for occupants. The second part (chapters 6 and 7) clarifies the responsibilities of the key players and identifies the training they need. The third part (chapters 8 to 17) deals with specialized topics and is directed to housing providers.

Ottawa: A joint publication of Canada Mortgage and Housing Corporation, Health Canada, and Indian and Northern Affairs Canada, Assembly of First Nations Housing Secretariat, 2001. 91 pages

Note: Publié aussi en français sous le titre : La moisissure dans les logements : Trousse d'information pour les collectivités des Premières nations

AVAILABILITY : Canadian Housing Information Centre

MORTGAGES AND HOUSING FINANCE

LONG-TERM OUTLOOK ON THE DEMAND FOR MORTGAGES IN CANADA: SUMMARY REPORT

Due to slower demographic growth, new housing construction will decline over the next two decades. In addition, because the baby boomer generation is aging, this demographic growth will be concentrated in the older segments of the population. The demand for mortgages will therefore undergo the combined effects of a decrease in the household formation rate and, since the older population is generally wealthier, a better capacity to finance home purchases with equity. This research is aimed at establishing the effects of these demographic changes on the demand for mortgages in Canada. The first part presents a review of the principal known theoretical and empirical results on the demand for mortgages. Then, the determinants of the number of mortgages, their average value and the total outstanding of these loans are studied using an econometric model. Finally, this model is applied to a series of projections to determine the future trends that will affect the Canadian residential mortgage market.

Prepared by Mario Fortin and André Leclerc. Prepared for Research Division, Canada Mortgage and Housing Corporation. CMHC Project Officer: Ian Melzer. Ottawa: CMHC, 2000. (Housing Affordability and Finance Series Research Report) 18 pages

Order number: 62275

NOTE 1 : Aussi disponible en français sous le titre : Perspectives à long terme de la demande de prêts hypothécaires au Canada : rapport sommaire

NOTE 2: No. 51 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : CMHC Information Products

NORTHERN HOUSING

EVALUATION OF THE MEASUREMENT OF HOUSING NEED IN NORTHERN AND REMOTE COMMUNITIES

The report evaluates the appropriateness of the current approach - the core housing need concept - for measuring housing need in Canada's northern and remote areas. It also examines other approaches as well as potential enhancements to the existing approach that may result in a better assessment of need in the North. It finds that the ideal measurement approach and data bases to support it would be too costly and that even improvements to the existing approach, to better take into account depth or severity of need, would increase measurement costs. It concludes that although the core need model has its weaknesses, it is as adequate a model as one can achieve to provide regular estimates of need in a cost effective manner.

Prepared by the Institute of Urban Studies. CMHC Project Officer: John Engeland. Prepared for Research Division, Canada Mortgage and Housing Corporation, 1999, c2001. (Housing Affordability and Finance Series Research Report) 95 pages

Order number: 62319

Note: Aussi disponible en français sous le titre : Évaluation de la mesure des besoins de logement dans les collectivités nordiques et éloignées

AVAILABILITY : CMHC Information Products

HEALTHY HOUSING IN THE NORTH: TOWARDS A NORTHERN HEALTHY HOUSE DEMONSTRATION PROJECT

This study is a review of the principles and technical information that can influence the realization of healthy and more sustainable housing in the North. The objective of this study is to begin addressing and enhancing the ecological sustainability, social appropriateness, and total (real) economic aspects of northern housing. The approach is to develop the concept of the Healthy House in a northern context.

People who design and construct housing in the North need to become more conscious of their impact on the environment, social structures and energy use. High environmental and dollar costs of fossil fuel energy in the North demand reconsideration of conventional building design, materials and technical systems. The need for repairing and reinforcing the social fabric calls for appropriate environmental and cultural design to create healthy and locally supported, self-sufficient northern communities. This study reviews and examines influences, aspirations, limitations and potential technical options for increasing sustainability in northern housing.

The study is divided into two parts. Part One is an overview of the northern context, ecological sustainability, social appropriateness, and total (real) economic aspects of northern housing. Part Two is a review of technical options and information resources.

The intent of this study is to encourage the inclusion of environmentally responsible Healthy House concepts, systems and materials in the design, construction, operation, and final disposal of housing. The study is intended for the use of decision-makers who can advance this goal and may include: homebuilders and buyers; community planners, architects, and engineers; regulators and administrators; and policy makers. Northern training institutions could also use the study to supply people with the knowledge and skills to create northern healthy housing solutions.

Ultimately, this study and its guidelines are intended to contribute to northern housing that is more ecologically sustainable and locally and socially appropriate during construction, in operation and at the end of service.

Written by Bob Bromley, Stephen Fancott, Bill Fandrick, Gino Pin. Additional writing by Donna Diakun. CMHC Project Manager: Aleta Fowler. Project Manager for Arctic Energy Alliance: Rob Marshall. Ottawa: Canada Mortgage and Housing Corporation, 2002. iii, 76 pages

NOTE: No. 02-126 in the Research Highlights Technical Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

NORTH ABOUT YOUR HOUSE SERIES

The North About Your House series is a series specifically designed around day to day Northern solutions as well as innovative Northern models of building practices which work under cold climate conditions. This series compliments the more in-depth North Research Reports. In this series you will find examples of how to use structural panels in the high arctic, means to cleanse wastewater in the North as well as demonstrated ways of constructing a roof which can withstand Northern conditions and how to choose a foundation system which will work in any of the Northern communities. Upcoming, expect articles on how to solve common Northern problems such as preventing vent stacks from freezing, how to keep your trucked water tank clean and how to reduce your utility costs through alternative means of energy production. The "North" series presently includes:

- Building with Structural Panels - Repulse Bay
- On-Site Wastewater Reclamation Systems for the North
- Eagle Lake Healthy House
- Residential Foundation Systems for Permafrost Regions
- Snowshoe Inn, Fort Providence Co-Generation Model
- Arctic Hot Roof Design.

AVAILABILITY : CMHC Information Products and available on CMHC's Web site. To download this document visit CMHC's Web site at:http://www.cmhc-schl.gc.ca/en/burema/gesein/abhose/index.cfm

NORTHERN LANDSCAPING: A GUIDE TO RESTORING THE PLANTS AND SOIL IN NORTHERN COMMUNITIES

This guide looks at ways disturbed northern soils, which are so common, can be made viable for plant growth - and subsequently, determines means of inducing plant growth in these disturbed areas. The guide is intended to help people in northern communities establish low-maintenance, "natural landscaping" appropriate to their region. The information will be useful to anyone involved in a community revegetation project including elected officials, contractors, schools and clubs, and other interest groups. It is not a guide to restoring contaminated sites, industrial sites, or for large ecological restoration projects. It is suitable for smaller-scale planting projects within communities. The emphasis is terrestrial (dryland) areas, though wetland (not fully aquatic) areas are also considered.

Natural landscaping involves the planting of a group of usually native species to meet some specific, aesthetic, management or design goals. Potential project sites are often already semi-natural, such as road embankments, stream edges, vacant lots or other community lands where the plants and soil were disturbed. Areas around homes and other buildings also have potential for natural landscaping. Planting new semi-natural areas which resemble the original ecosystems can beautify the community and produce other benefits, including:
-- creation of habitat for wildlife such as birds and squirrels;
-- reducing blowing dust;
-- protecting soils from erosion;
-- providing meaningful ways to educate about the natural environment;
-- fostering environmental awareness in a direct, hands-on, way;
-- building a sense of community by pursuing and achieving common goals.

Techniques described in this guidebook will help achieve these kinds of goals with little input of energy and resources such as water, fertilizers, and fuel, etc. once the revegetated area is established. A virtually self-supporting system is the goal.

NORTHERN HOUSING

Prepared by Avens Associates Ltd. Prepared for Research Division, Canada Mortgage and Housing Corporation. CMHC Project Officer: Aleta Fowler. Ottawa: CMHC, 2002. 87 pages

NOTE: No. 02-128 in the Research Highlights Technical Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

RESIDENTIAL FOUNDATION SYSTEMS FOR PERMAFROST REGIONS

Permafrost underlies all of the Yukon, Northwest and Nunavut Territories and much of the northern portions of the provinces, especially Manitoba and Quebec. Frozen ground conditions can have significant adverse effects on structures in the North. The effects of settlement and frost heaving commonly result in the premature deterioration of residential structures. Problems related to foundation design and construction can be reduced to a minimum if care is taken in the selection of suitable sites and appropriate foundation systems.

This project is a study on foundation systems for use in northern permafrost and intermittent permafrost areas. The study assembled, documented and analyzed all data possible from literature searches and from the field on all known foundation systems used in the North. The final report includes a decision making tree to enable communities, homeowners, builders and renovators to make informed and appropriate choices in foundation systems.

Prepared by AGRA Earth & Environmental Limited. CMHC Project Officer: Aleta Fowler. Ottawa: Canada Mortgage and Housing Corporation, 2000.

AVAILABILITY : Canadian Housing Information Centre

PERSONS WITH DISABILITIES

EXAMINING THE HOUSING CHOICES OF INDIVIDUALS WITH DISABILITIES

Many individuals with disabilities are concerned about the limited types of housing options available for persons with disabilities. However, information on the living arrangements and housing preferences of individuals with disabilities is limited. To begin to understand the situation better, this exploratory survey research study examines the housing choices of persons with mobility and/or agility disabilities living in Regina. The study provides information on the current living arrangements of individuals with disabilities; determines if there are individuals who could benefit from more accessible housing; explains what the term "more accessible housing" means in Regina and develops a profile of those people who could benefit from more accessible housing.

Prepared by Janice Solomon. This study was managed by the City of Regina with advice and assistance from the Advisory Committee on Access and the Department of Sociology and Social Studies, University of Regina. CMHC Project Officer: Thomas Parker. Ottawa: Canada Mortgage and Housing Corporation, 2002. (External Research Program Research Report) ca. 38 pages

AVAILABILITY : Canadian Housing Information Centre

HOME IS WHERE THEIR WHEELS ARE: THE HOMEMAKING AND HOUSING EXPERIENCES OF MOTHERS WHO USE WHEELCHAIRS FOR FULL-TIME MOBILITY

This project's objectives were to investigate how physically disabled mothers who are full time wheelchair users define, give meaning, and perform household activities within the social and spatial contexts of their homes. Eleven mothers who used wheelchairs for full-time mobility were interviewed concerning the ways in which they had accommodated to or modified their physical and social environments in order to fulfill homemaking and mothering responsibilities. Mothers described social and environmental facilitators and challenges to caring for themselves, their homes and families. Housing accessibility, wheelchair design, and attendant care had effects on their household and caregiving activities and experiences. Further, the manner in which mothers obtained, trained, and used various types of human and mechanical assistance was both a honed skill and sources of significant, and continuous stress. There are implications for care providers, housing planners and wheelchair designers to improve the quality of life for women with disabilities and their families.

Prepared by Denise Reid, Jan Angus, Patricia McKeever, and Karen-Lee Miller. Prepared for Canada Mortgage and Housing Corporation. CMHC Project Officer: Tom Parker. Ottawa: CMHC, 2001. (External Research Program Report) ca. 78 pages.

AVAILABILITY : Canadian Housing Information Centre

HOUSING CONDITIONS OF PERSONS WITH HEALTH AND ACTIVITY LIMITATIONS IN CANADA, 1991: A RETROSPECTIVE

This study provides, for the first time, an overall perspective on the general housing conditions of Canadians with health and activity limitations. Being a retrospective, it is based on data from the 1991 Census of Canada linked to the post-censal Health and Activity Limitations Survey (HALS). By comprehensively profiling housing conditions in 1991, the study forms a foundation for work that CMHC plans to do in linking data from the 2001 Census of Canada with the subsequent Health and Activity Limitations Survey.

The conclusions of the study are:

- Persons with disabilities are significantly more likely than other Canadians to be in core housing need, especially those who rent, are moderately or severely disabled, live alone, or are women or single mothers.
- Many need housing adaptations related to their disability but cannot afford them.
- Nonetheless, the great majority are satisfied with their present dwelling. Even most of those seeking change would prefer to adapt their current homes rather than move.

Based on research by Aron Spector, Ark Research Associates for John Engeland, Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, c2000. (Distinct Housing Needs Series Research Report) ix, 24 pages.

Order number: 62026

NOTE 1 : Aussi disponible en français sous le titre : Conditions de logement des personnes aux prises avec des problèmes de santé et des limitations d'activité au Canada, en 1991 : Rétrospective

NOTE 2: No. 58 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : CMHC Information Products

ECO-ASSESSMENT TOOL FOR PROPERTY MANAGERS OF MULTIPLE UNIT RESIDENTIAL BUILDINGS (MURBS)

The purpose of this project is to develop the MURB Tool with the objective of obtaining a self-assessment procedure which is easily accessible and which is relevant to Canadian property managers.

AVAILABILITY : Product is available on the web at: http://www2.energyefficiency.org/

REGULATORY REFORM

ACTION PLAN FOR REVITALIZING A COMMERCIAL ARTERY: COLLECTIF EN AMÉNAGEMENT URBAIN HOCHELAGA-MAISONNEUVE, MONTRÉAL, QUÉBEC = PLAN D'ACTION POUR LA RVITALISATION D'UNE ARTÈRE COMMERCIALE : COLLECTIF EN AMÉNAGEMENT URBAIN HOCHELAGA-MAISONNEUVE, MONTRÉAL, QUÉBEC

Hochelaga-Maisonneuve is a neighbourhood located in the east end of Montréal, Québec. In the fall of 1996, an umbrella group of local community organizations, the Collectif en aménagement urbain Hochelaga-Maisonneuve, received an A.C.T. grant in order to identify ways to revitalize a once vibrant section of Ste-Catherine Street in the southwestern part of the Hochelaga-Maisonneuve district. The project had three main objectives:

- modify zoning bylaws to encourage neighbourhood revitalization;
- improve the neighbourhood's image by minimizing factors that are driving away investment and people; and
- encourage property owners to participate actively in improving their community.

Specifically, the project team undertook the following activities:

- updated the study area's land-use maps;
- consulted with municipal housing authorities, local business associations and community groups; and;
- prepared a revitalization plan.

This A.C.T. initiative identified obstacles to revitalization found in the zoning bylaw as well as other factors contributing to the area's decline.

Case study written by: Julie Tasker-Brown. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 2000. (Affordability and Choice Today (A.C.T.) Demonstration Project; ACT Case Study)

AVAILABILITY : CMHC Information Products

AUSTRALIAN BUILDING REGULATION AND LIABILITY REFORMS: AN UPDATE

This report builds on, and complements, the 1999 report "Australian Building Regulation and Liability Reforms". It examines the experience of home builders with the new building regulatory system, reviews the regulatory regime being established in the state of Tasmania, and assesses how the information gathered might affect the adoption of similar reforms in Canada.

Prepared by Greg Lampert. Prepared for Canadian Home Builders' Association and Canada Mortgage and Housing Corporation. Ottawa: CMHC, 2000. (Healthy Housing and Communities Series) 53 pages

Order number: 62158

NOTE : Aussi disponible en français sous le titre : Réformes de la réglementation australienne de la construction et des dispositions en matière de responsabilité: Le Point

AVAILABILITY : CMHC Information Products

BRINGING COMPUTERS INTO THE PERMITTING PROCESS, STRATHCONA COUNTY, ALBERTA = AUTOMATISATION DU PROCESSUS D'ÉMISSION DE PERMIS, STRATHCONA COUNTY (ALBERTA)

This report describes the process followed by Strathcona County to develop a computerized permit processing system and data base, integrated with the existing tax roll and assessment data base. The objective of the project was to reduce red tape and streamline the application and approval process for development and building activities. Results achieved are documented and lessons for other municipalities considering a similar initiative are covered.

Case study written by: Rowena E. Moyes. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 2000. (Affordability and Choice Today (A.C.T.) Regulatory Reform Project; ACT Case Study) 30 pages

Order Number: 61992

AVAILABILITY : CMHC Information Products

HOW CAPE BRETON REGIONAL MUNICIPALITY STREAMLINED RESIDENTIAL BUILDING PLANS APPROVALS BY IMPROVING THE QUALITY OF PLANS SUBMITTED FOR REVIEW: FIRE-RESCUE AND BUILDING SERVICES DEPARTMENT OF THE CAPE BRETON REGIONAL MUNICIPALITY, NOVA SCOTIA = COMMENT LA MUNICIPALITÉ RÉGIONALE DU CAP-BRETON A RATIONALISÉ L'APPROBATION DES PLANS DE CONSTRUCTION RÉSIDENTIELLE EN AMÉLIORANT LA QUALITÉ DES PLANS PRÉSENTÉS POUR FINS D'EXAMEN : SERVICES DES INCENDIES ET DU BÂTIMENT DE LA MUNICIPALITÉ RÉGIONALE DU CAP-BRETON, NOUVELLE-ÉCOSSE

This report describes how the Cape Breton Municipality took a different approach to streamlining its residential building permit approval process. Where others focussed on relaxing standards or reorganizing their bureaucracy for greater efficiency, Cape Breton put its emphasis on the front-end of the system. It decided to improve the quality of the plans coming in for review.

The solution adopted by the Region was a training program to teach home builders and their designers how to complete and submit plans that are consistently code correct. Graduates of the course would be certified as "code-qualified" and plans submitted by them would require only a low-level review, meaning they could clear the system faster. For all practical purposes, their plans would arrive pre-approved.

Cape Breton conducted a trial run of its program in 1996 and began full implementation in the 1997 building season. The Region's average processing time for applications from "code-qualified" applicants has dropped to six days compared to an average of 14 days for the non-certified.

The Cape Breton experience can be easily duplicated and other municipalities could expect to reap the same benefits as Cape Breton. Staff would spend less time reviewing building plans and handling permit fee payments at a counter, so they would be free to do other work. The work environment for inspectors would improve because there would be fewer conflicts with builders over code violations.

There are also benefits for builders. They pay less to have their plans reviewed and significantly reduce the possibility of having to make expensive job-site corrections when inspectors spot code violations during construction.

Case study written by: Word-Works Communications Services. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 1998 (Affordability and Choice Today (A.C.T.) Regulatory Reform Project; ACT Case Study)
32 pages

Order Number: 61997

AVAILABILITY : CMHC Information Products

HOW THE DISTRICT OF NORTH VANCOUVER BUILT COMMUNITY ACCEPTANCE FOR THE LEGALIZATION OF SECONDARY SUITES IN SINGLE FAMILY NEIGHBOURHOODS = COMMENT LE DISTRICT DE NORTH VANCOUVER EN EST VENU À FAIRE ACCEPTER PAR LA COLLECTIVITÉ LA LÉGISLATION DES APPARTEMENTS ACCESSOIRES DANS LES QUARTIERS CONSTITUÉS DE MAISONS INDIVIDUELLES

This case study describes how the District of North Vancouver built community acceptance for the legalization of secondary suites in single family neighbourhoods. Secondary suites meet a market requirement for low-rent housing, they are a form of urban intensification and they address various needs (mostly financial) of home owners. In spite of these benefits, there is real and perceived community resistance to secondary suites. This opposition is built upon apprehensions that suites adversely affect neighbourhood quality of life and that the people who inhabit them may not be the kind of folks you want living next door. After unsuccessful efforts to close down secondary suites, the municipality decided to try a different approach. The District exposed and deflated the mis-perceptions of residents and suite owners by publishing and promoting four factual documents that:

- profiled owners of secondary suites and their tenants showing how they compared to the rest of the population;
- analysed the cost factors involved in upgrading existing suites to make them building code-compliant, concluding that $10,000 to $15,000 was a typical outlay;
- examined the types of complaints the District received about secondary suites as justification for putting appropriate controls in place; and
- examined the Provincial building code issues involved.

These 4 documents were circulated to builders and developers and to 22 community and ratepayer groups for comment. In addition, the District staged a televised public forum on the issue to obtain input from the public at large. In the end, the District achieved what it wanted -- widespread community acceptance that secondary suites serve genuine needs and therefore deserve a place in the housing mix. The by-law Council passed in October 1997, to legalize secondary suites in single family zones reflected public input. It demands sufficient space for parking, requires that owners live in the home and that there be only one suite per house. District of North Vancouver officials think their experience can benefit other municipalities. The process they used, particularly the research methodology, could be followed by others. Asked what they learned from their experience that could help others, District officials cite three key points:

1. provide the public with factual information based on solid research;
2. find common ground (in this case, consensus focused on health and safety issues); and
3. adopt a non-punitive approach.

Case study written by: Word-Works Communications Services. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 1999. (Affordability and Choice Today (A.C.T.) Regulatory Reform Project; ACT Case Study) 37 pages

Order number: 61991

AVAILABILITY : CMHC Information Products

INCREASING HOUSING IN RURAL COMMUNITY CENTRES, BEAUBASSIN PLANNING COMMISSION, CAP-PELÉ, NEW BRUNSWICK = LA DENSIFICATION RÉSIDENTIELLE DANS LES CENTRES COMMUNAUTAIRES RURAUX, COMMISSION D'AMÉNAGEMENT BEAUBASSIN, CAP-PELÉ (NOUVEAU-BRUNSWICK)

This ACT case study briefly outlines the unrestrained development in rural areas of New Brunswick that was threatening the province's natural resources and creating unsustainable communities. It documents the work of the Beaubassin Planning Commission on behalf of the Beaubassin East Rural Community to examine ways to control sprawl and enhance community life in rural areas. The key to increasing residential density in non-serviced rural areas was to identify alternative ways to treat wastewater in a manner that protects the environment and maintains health standards. The Planning Commission:

- conducted research on innovative types of sewage and storm-water drainage systems
- assessed the feasibility of installing shared or community septic systems to dispose of wastewater; and
- recommended modifications to provincial regulations so as to permit increased densities in non-serviced rural community centres.

As a result of these regulatory changes, property owners in designated community centres can now build a single-family home on a 2000 square metre lot, one-half the previous minimum lot size. The revised zoning bylaw also permits the construction of a second building on a 4,000 square metre lot containing a single-family home. The report outlines how the new zoning regulations enable the Beaubassin East Rural Community to offer a wider range of affordable housing and increase both the speed and flexibility of the development approval process.

Case study written by: Julie Tasker-Brown. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 1999. (Affordability and Choice Today (A.C.T.) Regulatory Reform Project; ACT Case Study) 34 pages

Order Number: 61995

AVAILABILITY : CMHC Information Products

ONE-STOP APPROVAL FOR MINOR RESIDENTIAL RENOVATIONS, ANDRÉ FORTIN, ARCHITECT, MONTRÉAL, QUEBEC = PROJET D'AUTORISATION INSTANTANÉE POUR LES TRANSFORMATIONS RÉSIDENTIELLES MINEURES, ANDRÉ FORTIN, ARCHITECTE, MONTRÉAL (QUÉBEC)

This report describes the work of André Fortin to improve the permit issuance process for minor residential renovation projects in the City of Montréal. This type of renovation project is frequently undertaken by the property owner without the assistance of a building professional and sometimes without a permit. In doing so, construction safety and quality, and architectural integration are adversely affected. Most homeowners lack the specialized technical knowledge required to prepare the plans and specifications that must be submitted to receive a building permit. Homeowners are often unfamiliar with the approval process, which can be complicated and lengthy, and some find little technical support available to them.

André Fortin, a local architect, was awarded an A.C.T. grant to develop a series of technical guides that help homeowners in the City of Montréal prepare permit applications for minor residential renovations. Separate guides were created for different types of renovation projects such as:

- converting basements to apartments;
- minor additions or interior renovations that would provide additional housing; and
- renovations that make the existing living space accessible to persons with disabilities.

The guides contain sample designs as well as advice on regulations in force and the scope of construction work required. The guides, as well as meetings with municipal staff, provide homeowners with technical support, reduce the documentation required, and speed up the approval process for minor residential renovation projects. This encourages good quality renovation work that complies with existing municipal regulations and reduces administration costs.

The report includes a sample technical guide for building a deck and a sample application form for a basement unit dwelling. The technical guides are a useful reference for all Canadian municipalities using National Building Code regulations.

Case study written by: Julie Tasker-Brown. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 1999. (Affordability and Choice Today (A.C.T.) Streamlined Approval Process Project; ACT Case Study) 32 pages

Order Number: 61999

AVAILABILITY : CMHC Information Products

OPPORTUNITIES FOR IMPROVING THE INSPECTIONS PROCESS, CITY OF VANCOUVER, BRITISH COLUMBIA = OCCASIONS D'AMÉLIORER LE PROCESSUS D'INSPECTION, VILLE DE VANCOUVER (COLOMBIE-BRITANNIQUE)

In the mid-1990s, the building regulatory process in Vancouver was identified as very complex and time consuming. Although the major duplication and red tape issues were found in the planning approval process, building inspections could also be a problem. Trade and building inspection functions were separate, data recorded in the field had to be re-recorded later, information needed on site was only available at the municipal office, and interpretation of requirements could vary from one person to another.

In 1994, the City of Vancouver started an ambitious program to fundamentally change and improve its services, an initiative it called the "Better City Government Program." Redesign of the planning and inspections process represented a central element of this program. Within the inspections area, a team was set up to re-think what the goals and functions of construction site inspections really were, and how they could best be accomplished.

The project produced benchmarking information of best practices, based on six other municipalities in Canada, the United States and Australia, plus the Workers' Compensation Board of British Columbia. The team also produced a proposed process for inspections, including flow charts that concentrated on value-added work and expanded the responsibilities of inspectors. Their "Day-in-the-Life" description emphasized site use of cell phones, laptop computers and modems. They also produced a business case, with plans for implementation and cost recovery. Through an assessment of field technologies, field staff isolated pros and cons of different computerized systems and produced practical criteria for judging equipment in the future.

Actual implementation has been delayed by a rethinking of the reorganization of the planning and permitting process. Many elements were also put on hold pending decisions on a major new computerization of Vancouver's overall geographic and permitting functions. However, the project has produced a body of information which leaves the inspections department well positioned to pursue change when those two initiatives are completed. Also, a new "team approach" has been instituted for complex new projects and renovations. So far, the main results have been in speeding up development approvals.

Prepared by Rowena E. Moyes. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 2001. (Affordability and Choice Today ACT Regulatory Reform Project; ACT Case Study)31 pages

Order number: 62326

AVAILABILITY : CMHC Information Products

SURREY'S USE OF INTERACTIVE TOUCH-SCREEN TECHNOLOGY TO EXPEDITE CLIENTS REQUESTS FOR BUILDING PERMIT AND DEVELOPMENT PROCESS INFORMATION: THE CITY OF SURREY PLANNING AND DEVELOPMENT DEPARTMENT = UTILISATION DE LA TECHNOLOGIE INTERACTIVE À ÉCRAN TACTILE PAR LA VILLE DE SURREY AFIN D'ACCÉLÉRER LE TRAITEMENT DES DEMANDES DE PERMIS DE CONSTRUIRE ET D'INFORMATION SUR LE PROCESSUS D'AMÉNAGEMENT : SERVICE D'URBANISME ET D'AMÉNAGEMENT DE LA VILLE DE SURREY

This case study report documents the use of touchscreen and computer technology by the City of Surrey, B.C. so individuals seeking information about land development and building permit policies can serve themselves. The City says its Touchscreen Info-Centre helps streamline permit handling and enhance customer service. Since delays in construction cost money, the kiosks serve the cause of housing affordability by making permit issuance procedures more efficient. The methodology used to create them could be easily emulated by any other municipality.

Case study written by: Word-Works Communications Services. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 2000. (Affordability and Choice Today (A.C.T.) Regulatory Reform Project; ACT Case Study)

AVAILABILITY : CMHC Information Products

SURVEY OF CANADIAN MUNICIPALITIES: REGULATORY MEASURES FOR HOUSING AFFORDABILITY AND CHOICE

Through a survey of 110 Canadian municipalities, this study collects information on the status of regulatory reforms aimed at increasing housing affordability and choice. The survey also identifies housing-related issues considered to be key priorities by municipalities. The research resulted in a final report and research highlight and will be of interest to municipalities, builders, non-profit housing groups and housing professionals.

REGULATORY REFORM

Prepared by Spurr Research Associates; CitySpaces Consulting Limited, Luba Serge et Associés, and Fuller Information. CMHC Project Officer: Susan Fisher. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 2001. ca. 166 pages

NOTE: No. 87 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

RENOVATION AND INSPECTION

CMHC SPONSORED FEASIBILITY STUDY ON USING THE PRIVATE HOME INSPECTION INDUSTRY TO COLLECT DATA ON THE PHYSICAL CONDITION OF CANADA'S EXISTING HOUSING STOCK

The purpose of this project was to conduct a feasibility study on the use of the private home inspection industry nationally as a vehicle for gathering data on housing characteristics and physical conditions. The study investigated the type of information desired by CMHC and the type of information currently being gathered by the inspection industry. The study considered the various reporting systems being used, the numbers and types of homes inspected annually, geographic coverage, reliability of the information, anticipated costs, confidentiality requirements, use limitations and potential contractual arrangements for obtaining this and other data for CMHC's purposes. The final report for this study is complete. Next steps involve an investigation of similar interests by other groups and departments, internal and external to CMHC to consider the possibility of undertaking a coordinated data collection project.

Prepared by Applegate Ventures Ltd. Prepared for Research Division, Canada Mortgage and Housing Corporation. CMHC Project Officer: Darrel Smith. Ottawa: CMHC, 2001. 112 pages

AVAILABILITY : Canadian Housing Information Centre

FEASIBILITY STUDY FOR A HERITAGE RENOVATION ASSISTANCE SERVICE, LAC-SAINT-JEAN HISTORICAL SOCIETY, ALMA, QUEBEC = ÉTUDE DE FAISABILITÉ SUR UN SERVICE D'AIDE À LA RÉNOVATION PATRIMONIALE, SOCIÉTÉ D'HISTOIRE DU LAC-SAINT-JEAN, ALMA (QUÉBEC)

This case study documents the work of the Lac-Saint-Jean Historical Society which received an A.C.T. grant to study the feasibility of establishing a "Heritage Renovation Assistance Service". This Service is targeted at those involved in the renovation process and provides both do-it-yourself and professional home renovators with a comprehensive and easy-to-understand source of information on acceptable renovation techniques and materials. The case study report describes the project's aims and results, and the community and key players involved. The benefits resulting from the Service are described as well as how this type of service would be useful to renovators in other municipalities.

Case study written by: Julie Tasker-Brown. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 1999. (Affordability and Choice Today (A.C.T.) Regulatory Reform Project; ACT Case Study) 38 pages

Order Number: 61994

AVAILABILITY : CMHC Information Products

HIRING A CONTRACTOR. ABOUT YOUR HOUSE; CE26A

At some time, most homeowners will hire someone for repairs or renovations. Even a homeowner experienced in home repairs may have to hire a contractor because of the size or level of difficulty of the job. This fact sheet helps homeowners choose a contractor and work effectively and fairly with the chosen contractor. Topics covered include getting estimates, writing a contract, paying for the work, consumer protection laws, and insurance.

Ottawa: Canada Mortgage and Housing Corporation, 2001. (About Your House; CE26a) 6 pages

NOTE : Aussi disponible en français sous le titre : Le choix d'un entrepreneur. Votre maison; CF26a

AVAILABILITY : CMHC Information Products and available on CMHC's Web site.
To download this document visit CMHC's Web site at:
http://www.cmhc-schl.gc.ca/en/burema/gesein/abhose/index.cfm

HIRING A HOME INSPECTOR. ABOUT YOUR HOUSE; CE35

This fact sheet offers helpful guidance to consumers on questions to ask and what to look for when in the market for a qualified home inspector. The fact sheet was done in consultation with the private home inspection industry through members of the Canadian Association of Home and Property Inspectors (CAHPI) as well as through home and property inspector members of the Canadian Home Inspectors and Building Officials Committee. The fact sheet includes information on the following:

- current situation (who is out there and what regulations exist);
- CAHPI's national initiative (purpose and objectives);
- services provided by home inspectors and why they are needed;
- questions to ask and what to look for when hiring a home inspector; and
- what to expect (time involvement, cost, written report).

Ottawa: Canada Mortgage and Housing Corporation, 2002, c2001. 4 pages

Order number: 62839

Note: Aussi disponible en français sous le titre : Le choix d'un inspecteur en bâtiment

AVAILABILITY : CMHC Information Products and available on CMHC's Web site.
To download this document visit CMHC's Web site at:
http://www.cmhc-schl.gc.ca/en/burema/gesein/abhose/index.cfm

HISTORY OF CANADA'S RESIDENTIAL REHABILITATION ASSISTANCE PROGRAM (RRAP)

The Residential Rehabilitation Assistance Program (RRAP) was announced by the Government of Canada in the spring of 1973 and became operational the following year. It came about because of the dual recognition that the existing housing stock represented an important national asset that needed to be preserved, and that a significant portion of this stock was substandard and occupied by households unable to afford necessary repairs. Over the following 26 years, more than 600 000 dwellings, mostly comprised of self-contained homeowner and rental units, but also a good number of beds in hostels, dormitories, special care facilities and rooming houses, were repaired with RRAP assistance across all regions and areas of the country. During this time, RRAP demonstrated great versatility in adapting to the priorities of the day in achieving a broad range of public objectives from improving the housing conditions of low-income Canadians, neighourhood improvement and employment generation, to meeting the special needs of persons with disabilities and the homeless.

This history is divided into two main parts. The first recounts the evolution of RRAP from its inception to the present day. The second part explores the evolution of critical aspects of RRAP related to need, its design, management and accomplishments, and concludes with an epilogue which reviews reasons for RRAP's durability and explores the need for targeted housing rehabilitation programs in the future.

Prepared by Dale Falkenhagen for Canada Mortgage and Housing Corporation. CMHC Project Officer: Brian Davidson. Ottawa: CMHC, December 2001. xviii, 196 pages

Note : Aussi disponible en français sous le titre : Histoire du Programme d'aide à la remise en état des logements (PAREL) du Canada

AVAILABILITY : Canadian Housing Information Centre

HOMEOWNER'S INSPECTION CHECKLIST

The "Homeowner's Inspection Checklist" is aimed to help consumers conduct an inspection of their home to identify problems or potential problems. It will help identify symptoms, cause and cures for common problems in homes. This book is not a comprehensive inspection manual, nor will it replace an examination by a qualified home inspector. It will help determine if a thorough inspection is needed, it you can repair a problem yourself, or if you should consult a professional tradesperson or contractor. The "Homeowner's Inspection Checklist" will also help you assess how a home measures up according to the principles of Healthy Housing occupant health, energy efficiency, conservation of resources, environmental impact and affordability. A maintenance calendar at the end of this book is a weekly guide to routine tasks.

Prepared by Ted Kesik. CMHC Project Officer: Darrel R. Smith. Ottawa: Canada Mortgage and Housing Corporation, 2002. 107 pages

Order number: 62114 **Price: $19.95 + GST and handling charges

NOTE: Aussi disponible en français sous le titre : Guide d'inspection du propriétaire-occupant

AVAILABILITY : CMHC Information Products

PRIORITIZED PRACTICAL APPROACHES FOR ESSENTIAL REMEDIATION, REPAIR AND MAINTENANCE PROJECTS

The purpose of this project was to identify and prioritize essential remediation work which must be completed before undertaking common renovation projects. Information has been produced in twelve independent fact sheets on how to identify the prioritized work, consequences of not doing the work, practical solutions, and benefits. This information will be useful to homeowners to help them prioritize essential repair work either in isolation or as part of a renovation project. The information can also be used by renovators as a tool to help convince homeowners of other essential repairs which need to be corrected as part of a renovation project when applicable. These twelve "Before You Renovate" fact sheets include the following titles:

- Assessing the Renovation Project. About Your House Series; CE 28a
- Before You Start Renovating Your Basement - Structural Issues and Soil Conditions. About Your House Series; CE 28b
- Before You Start Renovating Your Basement - Moisture Problems. About Your House Series; CE 28c
- Before You Start Renovating Your Kitchen. About Your House Series; CE 28d
- Before You Start Renovating Your Bathroom. About Your House Series; CE 28e
- Before You Start Window and Door Renovations. About Your House Series; CE 28f
- Before You Start Repairing or Replacing Roof Finishes. About Your House Series; CE 28g
- Before You Start Repairing and Replacing Materials -- Exterior Walls. About Your House Series; CE 28h

- Before You Start an Energy Efficient Retrofit -- Mechanical Systems. About Your House Series; CE 28i
- Before You Start an Energy Efficient Retrofit -- The Building Envelope. About Your House Series; CE 28j
- Before You Start Assessing the Comfort and Safety of Your Home's Mechanical Systems. About Your House Series; CE 28k
- Before You Start a New Addition. About Your House Series; CE 28L

Ottawa: Canada Mortgage and Housing Corporation, 2001.

AVAILABILITY : CMHC Information Products and available on the Internet at: http://www.cmhc-schl.gc.ca/en/burema/gesein/abhose/index.cfm

RENOVATING DISTINCTIVE HOMES: ONE-STOREY HOUSES OF THE '60S AND '70S

This publication will lead the homeowner through an energy efficient, healthy renovation. The document highlights floor plan changes and repairs that are particular to sixties and seventies bungalows, as well as including general guidance on renovation planning and how to hire a contractor. There are also details in the publication on how to make these forty year old houses more energy efficient, healthier for occupants, and suitable for people with limited mobility. The advice considers occupant lifestyle and needs, structural and maintenance requirements, "Healthy Housing" improvements (including environmental and energy-efficiency), and the impact on home equity and resale value.

Ottawa: Canada Mortgage and Housing Corporation, 2002. 88 pages

Order number: 62805 **Price: $14.95 + GST and handling charges

Note : Aussi disponible en français sous le titre : La maison réinventée: rénovation des bungalows des années 60 et 70

AVAILABILITY : CMHC Information Products

SAMPLE RENOVATION CONTRACT. ABOUT YOUR HOUSE; CE26B

The purpose of this project was to produce an About Your House fact sheet on a Sample Renovation Contract. The fact sheet includes an example of a contract to illustrate what should be included in a contract when undertaking renovation work. It also includes a commentary to explain what and why the various aspects of a contract are important. The Canadian Home Builders' Association (CHBA) participated on the review committee for this project.

Ottawa: Canada Mortgage and Housing Corporation, 2001. (About Your House; CE26b) 12 pages

NOTE : Aussi disponible en français sous le titre : Modèle de contrat de rénovation. Votre maison; CF26b

AVAILABILITY : CMHC Information Products and available on CMHC's Web site. To download this document visit CMHC's Web site at:http://www.cmhc-schl.gc.ca/en/burema/gesein/abhose/index.cfm

ANALYSIS OF PENSION AND RRSP INVESTMENTS IN CANADIAN RENTAL HOUSING

This study assesses whether Canadian registered pension plans (RPPs) and retirement savings plans (RRSPs) currently under-invest in rental housing, and if so, whether there are specific obstacles to investment and policy options that would potentially increase investment. The study methodology involves an integrated approach consisting of five elements:

- a review of the legislative and regulatory environment;
- a synthesis of the theoretical and empirical literature on modern portfolio theory;
- a survey of pension funds and money managers;
- a comparative assessment of the Canadian/U.S. environments and results; and
- a quantitative analysis of rental housing investments by RPPs/RRSPs.

The primary focus of the study is on equity investments. The study finds that RPPs/RRSPs hold only minuscule amounts of rental housing investments. The evidence presented indicates that there is substantial scope for increasing RPP/RRSP investment in rental housing, assuming current obstacles can be removed. Any significant boost in the flow of such savings to rental housing could substantially increase equity investments in the sector and potentially lower cost and rents. The study identifies a number of specific obstacles to investment and makes suggestions for improving the investment climate.

Prepared by Alex S. MacNiven. CMHC Project Officer: Ian Melzer. Ottawa: Canada Mortgage and Housing Corporation, 2001 (External Research Program) 183 pages.

NOTE: No. 79 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

ETHICAL AND SOCIAL FUND INVESTMENTS IN LOWER-TO-MODERATE INCOME AFFORDABLE RENTAL HOUSING IN CANADA: AN ASSESSMENT

This study assesses the feasibility of encouraging equity investment in affordable lower-to-moderate income rental housing (ARH) in Canada, within the framework of a public-private partnership (PPP) model, via ethical or socially responsible investment (SRI) funds and pension funds. The study examines the U.S. model for ARH PPP arrangements, with particular emphasis on the features that relate to equity investment. The structure of the ethical investment industries in both the U.S. and Canada are examined in detail. A number of specific reviews of fund investment structures in the U.S. are undertaken, and the results of a survey of funds in Canada are presented. The regulatory/legislative and investment environments in Canada are assessed. The study explores a number of options for structuring equity investments for ethical funds in Canada. The primary conclusion of the study is that such investments are conceptually feasible but that both the U.S. and Canada have a long way to go in developing the investment framework and incentive structure to facilitate such investments.

Prepared by Alex S. MacNevin. Prepared for Canada Mortgage and Housing Corporation. CMHC Project Officer: Lisa Daher. Ottawa: CMHC, 2002. (External Research Program Research Report) 134 pages

AVAILABILITY : Canadian Housing Information Centre

INTERVENTIONS FOR ROOMING HOUSES, SROS AND TENANTS: FINAL REPORT

Outside of social housing, rooming houses and single room occupancy (SRO) units are the least expensive form of permanent housing, and essential for very low-income single people. The CMHC study, Regulatory Factors in the Retention and Expansion of Rooming House Stock (2000) provided information on a number of strategies to stabilize the rooming house stock, which is under constant threat from a variety of forces.

This study looked at other approaches to conserving rooming house and SRO stock and stabilizing tenancies. A range of initiatives was addressed in seven case studies involving: conflict reduction; public education; community development; building construction; and supportive housing.

Prepared by The Starr Group Inc. CMHC Project Officer: Anna Lenk. Ottawa: Canada Mortgage and Housing Corporation, December 2001. 93 pages

NOTE: No. 102 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

INVESTMENT IN RESIDENTIAL RENTAL HOUSING IN CANADA: LESSONS LEARNED FROM STUDIES AND RESEARCH

The objective of this project was to identify the reasons that lead investors to include rental properties in their portfolios. The work consisted of a review of the literature addressing the choice of residential rental properties as investments and the place of such investments within investor portfolios. The consultant therefore had to present the different theories and approaches serving to determine the criteria used by investors.

This review first revealed the lack of reliable data on real estate return. Without such data, the empirical properties of this type of investment, and particularly its diversification effect, cannot be established accurately. The absence of any Canadian studies on this subject is also noted. In spite of these findings, certain studies tend to demonstrate that taxation related to rental housing investments has had a significant impact on the inclusion of such investments in investor portfolios. There is also the strong correlation between real estate return and inflation that may have encouraged investors to include such investments in their portfolios to protect their return against inflation.

Prepared by Mario Fortin. Prepared for Canada Mortgage and Housing Corporation. CMHC Project Officer: Benoît Sanscartier. Ottawa: CMHC, 2000, c1996.

NOTE: Issued also in French under the title: Investissement dans le logement locatif résidentiel au Canada : leçons des études et avenues de recherche

AVAILABILITY : Canadian Housing Information Centre

LOGEMENTS PRIVÉS AU QUÉBEC : LA COMPOSITION DU PARC DE LOGEMENTS, LES PROPRIÉTAIRES BAILLEURS ET LES RÉSIDANTS

This study was conducted by the INRS-Urbanisation, Culture et Société for the Société d'habitation du Québec, Canada Mortgage and Housing Corporation, the Régie du logement and the Régie du bâtiment du Québec. The basic information, concerning the characteristics of the Quebec housing stock, its occupants and the ownership of the private rental housing stock, was obtained through a telephone survey conducted by Jolicoeur et associés among renters, homeowners and landlords in the different segments of the Quebec rental housing stock. This survey was conducted from October 5, 2000, to February 12, 2001.

The first stage of the survey was conducted among renters and homeowners, following a stratified sampling plan based on region and tenure. With regard to the regions, the sample was structured so as to obtain significant data for three sets: the Montréal and Québec metropolitan areas and the territory outside the major centres. In this stage of the survey, 10,330 households were polled, including 6,051 homeowner households and 4,279 renter households. The second stage of the survey consisted in reaching a representative sample of landlords. To this end, building owner or manager contact information provided by the renters of private housing was used. In this second stage of the survey, the sample was stratified based on region and building size, and 1,147 interviews were conducted.

The analysis presented examines, in turn, each of the following elements: the composition of the housing stock; landlords; renter households; homeowner households; and renovations performed by the homeowners.

Prepared by Francine Dansereau and Marc Choko, with the collaboration of Gérard Divay. Québec: Société d'habitation du Québec, 2002.

AVAILABILITY : Centre de documentation, Société d'habitation du Québec
Tél.: (418) 646-7915, (514) 873-9611, 1-800-463-4315
One can download or order this document on the Internet at:
http://www.shq.gouv.qc.ca

REGULATORY FACTORS IN THE RETENTION AND EXPANSION OF ROOMING HOUSE STOCK: FINAL REPORT

This study was carried out to develop a comprehensive picture of how rooming houses are regulated across the country and, furthermore, how those regulations have affected the number and type of rooming houses over the years. A review of recent literature, together with profiles of rooming house regulatory practices in 11 major centres across Canada, found:

- that most municipalities follow similar regulatory approaches based on a combination of zoning regulations, maintenance and occupancy standards, building standards, fire-safety standards, public health standards and licensing laws;
- the lack of co-ordination in the application and enforcement of these regulations in many municipalities is creating concerns among operators and other stakeholders in the rooming house sector;
- there is a growing demand for rooming house-type accommodation due to such factors as growth in single person households, increasing homelessness and growing student needs;
- supply factors such as shrinking vacancy rates, escalating rents, long social housing waiting lists and lack of new social housing development are placing growing pressure on the rooming house sector.

The report identifies a number of lessons for effective enforcement and outlines innovative regulatory practices that have been adopted by municipalities such as the City of Edmonton and the City of Winnipeg to reduce regulatory barriers and costs.

Prepared by The Starr Group Inc. in association with Richard Drdla Associates. CMHC Project Officer: Anna Lenk. Ottawa: Canada Mortgage and Housing Corporation, 2000.

NOTE: No. 48 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

RENTAL HOUSING

RENTERS AND THEIR HOUSING CONDITIONS: FROM THE 1980S INTO THE 1990S - A RETROSPECTIVE.

Between the early 1980s and the mid-1990s, the situation facing renters in Canada changed. The demography of Canada's renter population changed, the economy went through boom, bust and much restructuring, and changes in spending by governments on social programs resulted in many renter households facing difficult choices. This report assembles comparable data on the change in condition of renter households between the early 1980s and mid-1990s. It is based largely on Household and Income, Facilities and Equipment (HIFE) micro-data samples from Statistics Canada.

Prepared by John R. Miron. CMHC Project Officer: John Engeland. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 2001. 38 pages

AVAILABILITY : Canadian Housing Information Centre

RESIDENTIAL DEVELOPMENT

EFFECTS OF DEVELOPMENT CHARGES ON URBAN FORM

The purpose of this research project was to conduct a nation-wide survey of builders and developers to determine the effects of development charges on industry decisions related to residential densities, location and timing. Case studies in selected cities explore in more detail how specific development charge regimes are affecting residential development patterns.

This report looks at the effects of development charges (dc's) on industry decisions related to residential densities, location and timing. The first phase of the work consists of a survey of 1,214 builders and developers; 265 responses were submitted (22%), representing firms ranging in size from 5 to 60 employees. All of the firms are located in urban regions consisting of more than one municipality. Some of the results are presented below:

- Most of the respondents (86%) indicated that differences in development charge fees among the municipalities in their respective urban regions have at least some impact on their regional locational decisions; 32% indicated a major impact.
- Slightly more than 17% of respondents said that they always locate in municipalities with lower dc's, while 69% said that they sometimes favour areas with lower dc's.
- When locating within a municipality where dc's vary by location, 64% of respondents said that "area-specific" charges have a "major" or "medium" impact on their locational decisions; of these, 20.5% "always" located in lower-charge areas, while 63.6% "sometimes" located in lower-charge areas.
- A majority of respondents (54.5%) thought that development charges have a "major" or "medium" impact on their decisions related to lot sizes; of these, 56.5% thought that they tended to decrease lot sizes.
- 31.4% of respondents felt that the dc's in their respective municipalities favour detached houses; 24.4% said they favour attached houses; 18.6% said multiples; 14.0 thought they encourage a mix of houses; and the rest didn't know.

Prepared by Ray Tomalty, Peck & Associates in association with Christine Warne and Pip White of Urban Aspects. Ottawa: Canada Mortgage and Housing Corporation, 2000.

AVAILABILITY : Canadian Housing Information Centre

PRO-HOME: A PROGRESSIVE, PLANNED APPROACH TO AFFORDABLE HOME OWNERSHIP

This study describes an incremental or progressive approach to residential development, the Pro-Home approach, and examines its potential to increase access to affordable home ownership in Canada.

Pro-Home refers to an incremental approach to housing development whereby households enter the market at a level they can afford, and over time, alter or expand their housing in accordance with their financial means and housing needs. Using lessons learned from the unplanned residential developments that took place in Toronto prior to 1950, the Pro-Home proposes a planned and progressive approach to housing development.

This study is organized in the following five parts:

- Part I outlines the context underpinning the Pro-Home concept, namely, the need to introduce new practical solutions to address the growing problem of housing affordability in major urban areas in Canada.
- Part II reviews a number of Canadian and international precedents of owner-built or incremental housing, tracing how progressive approaches to residential development have facilitated access to affordable home ownership and what lessons can be derived from these experienceS.
- Part III provides a general description of the Pro-Home concept, illustrating its key features and design elements.
- Part IV presents a detailed application scenario of the Pro-Home approach to housing development, including a cost proforma and analysis of possible constraints to implementation.
- Part V proposes an implementation framework for incremental housing development, focusing on organizational elements such as partnerships, an organizational model and an implementation process.

Prepared by John van Nostrand of Planning Alliance with the assistance of Jill Wigle. CMHC Project Officer: Fanis Grammenos. Ottawa: Canada Mortgage and Housing Corporation, 2000. (External Research Program) vii, 65 pages.

AVAILABILITY : Canadian Housing Information Centre

PROJECT TO ENCOURAGE TRIPLEX AND QUADRUPLEX HOUSING, CITY OF NANAIMO, BRITISH COLUMBIA = PROJET VISANT À ENCOURAGER LES TRIPLEX ET QUADRUPLEX, VILLE DE NANAIMO (COLOMBIE-BRITANNIQUE)

This case study report describes the work of the City of Nanaimo to expand the opportunities for its growing numbers of lower to moderate income seniors, empty nesters and first time buyers to access affordable housing through the creation of well designed triplex and quadruplex projects. Community representatives, the Nanaimo Home Builders' Association and the Nanaimo Chapter of the Vancouver Island Architects Association participated in this project to provide an alternate form of housing that would fit in with traditional neighbourhoods. The objectives of the project were to:

- bring stakeholders in the housing sector together to design three innovative triplex and quadruplex housing forms;- prepare design guidelines for the development of attractive, affordable, triplex and quadruplex housing; and
- adopt appropriate changes to the Official Community Plan, Zoning Bylaw, Subdivision Guidelines and Multi-family Development Permit Guidelines to allow for this type of housing within single family neighbourhoods.

RESIDENTIAL DEVELOPMENT

Case study written by: Rowena E. Moyes. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 1998. (Affordability and Choice Today (A.C.T.) Regulatory Reform Project; ACT Case Study) 48 pages

Order Number: 61996

AVAILABILITY : CMHC Information Products

SENIORS

ÉTUDE DE L'ORIENTATION SPATIALE DANS LES COMPLEXES RÉSIDENTIELS POUR PERSONNES ÂGÉES PRÉSENTANT OU NON DES TROUBLES COGNITIFS

Dementia, with a prevalence of 8% among Canadians aged 65 years and over, diminishes people's ability to find the places where they want to go and consequently limits them on the use of their residential environment. Older people who have dementia are likely to share residential spaces with those who do not, which form the majority. This situation turns out to be problematic with respect to architectural design. The goal of this descriptive and exploratory study is to generate design criteria to facilitate wayfinding for elderly people living in mixed residences, that is, buildings dedicated both to individuals with and without cognitive problems. Qualitative and quantitative data were obtained on the sites of three urban residences that represent variable degrees of socio-economic affluence. They were drawn from interviews with staff and with residents affected by cognitive problems, and from observing the wayfinding behaviors of selected residents. The results emphasize the devastating impacts of impaired wayfinding abilities on the residents' quality of life. The most problematic situations involved searching for one's own apartment and confusion between floors. These raise concerns over the effects of using repetitive floor layouts, and the absence of architectural landmarks and appropriate signage. To be effective, circulation systems must be clear and well organized. Practical interventions with respect to architecture, wayfinding information, and human environment are suggested, thereby initiating a reflection on the future of residential environments for older people.

Prepared by Romedi Passini ... and others. CMHC Project Officer: Luis Rodriguez. Ottawa: Canada Mortgage and Housing Corporation, 2002 printing. (External Research Program Research Report) 66 pages

AVAILABILITY : Canadian Housing Information Centre

HOUSING OPTIONS FOR OLDER CANADIANS: USER SATISFACTION STUDY

The objective of this research was to carry out user satisfaction studies of some of the newer housing options that are currently available to older Canadians, and to produce an objective and detailed report based on the results of the research.

The research included 24 case studies of housing options for older Canadians from across the country. During site visits to each of these housing options, focus groups were held with key stakeholders involved in establishing and operating the projects (planners, managers, owners, service-providers, etc.), a sample of residents participated in "walk and talk" evaluations of their dwelling units, and study staff completed an architectural checklist. Additionally, photos, architectural drawings, brochures and policy manuals were collected from each of the 24 sites and a resident satisfaction survey was distributed.

The report is published in 3 parts:

Part 1 presents the findings from the 24 case studies that were carried out, emphasizing the projects' design characteristics and development process, as well as the residents' level of satisfaction with their housing. The results are grouped under six categories of housing.

Part 2 presents detailed findings from the Resident Satisfaction Survey that was carried out. These are discussed under the following nine headings: Respondent Characteristics, Personal Housing History, Current Housing, Satisfaction with Housing Features, Satisfaction with Tenure Arrangement, Satisfaction with Social Involvement and Interaction, Satisfaction with Management and Operational Approaches, Satisfaction with Support Services and Amenities and Overall Satisfaction with Housing Project.

Part 3 contains the frequency tables from which the data in Parts 1 and 2 reports derived, as well as the various forms, checklists, and research and survey tools that were used to carry out the study.

Prepared by Gloria Gutman, Mary Ann Clarke Scott and Nancy Gnaedinger in collaboration with Danielle Maltais, Luba Serge and David Bruce. Prepared for Research Division, Canada Mortgage and Housing Corporation. CMHC Project Officer: Luis Rodriguez. Ottawa: CMHC, 2001. 3 volumes.

NOTE: No. 83 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

IMPROVING QUALITY OF LIFE IN BOARDING HOUSES FOR THE ELDERLY: REGROUPEMENT DES RÉSIDENCES POUR RETRAITÉS DU QUÉBEC, MONTRÉAL, QUÉBEC = AMÉLIORATION DE LA QUALITÉ DE VIE DANS LES RÉSIDENCES POUR PERSONNES ÂGÉES : REGROUPEMENT DES RÉSIDENCES POUR RETRAITÉS DU QUÉBEC, MONTRÉAL, QUÉBEC

In Quebec, as elsewhere in Canada, the growing number of seniors combined with a serious lack of housing has led to the proliferation of small, privately-run residences providing room and board to elderly persons. In many cases, these homes operate without a permit and therefore, without adequate regulatory control over the quality of the accommodation or services provided.

In response to this situation, in December 1993, the City of Châteauguay amended its bylaw to ensure that homes providing room and board to more than two persons meet minimum standards of health and safety. Inspired by the Châteauguay example, the Regroupement des résidences pour retraités du Québec (RRRQ), a provincial organization of seniors' residences, undertook an A*C*T initiative to develop a set of regulatory tools intended for use by Quebec municipalities wishing to improve the quality of life in small boarding houses for elderly people.

This case study report describes the work done in reviewing existing regulatory initiatives in Châteauguay as well as in Laval and Longueuil, which led to the identification of three approaches to improving living conditions in small boarding houses:

- a model bylaw that applies to boarding houses containing fewer than ten rooms for rent;
- a municipal registry of homes that comply with the bylaw; and
- the creation of an ongoing dialogue between the key players, such as the municipality and a CLSC.

Case study written by: Julie Tasker-Brown. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 1999. (Affordability and Choice Today (A.C.T.) Streamlined Approval Process Project; ACT Case Study)

Order Number: 61998

AVAILABILITY : CMHC Information Products

SÉCURITÉ EN CAS D'INCENDIE : PERSONNES À MOBILITÉ RÉDUITE VIVANT EN MILIEU RÉSIDENTIEL RÉGULIER

The primary objective of the project was to identify measures that could increase the level of fire safety for persons with disabilities living in regular residential buildings.

The project concluded that owners of regular residential buildings must become aware of the situation of persons with disabilities who live in their buildings and that they must establish a fire safety plan (FSP) with evacuation strategies that take into account the architectural characteristics of the building, the characteristics and evacuation capacities of the occupants and the intervention capability of the local fire department. The report also provides advice to help owners establish a fire safety plan for their buildings.

Prepared by Sophie Lanctôt, Société Logique inc. CMHC Project Officer: Luis Rodriguez. Ottawa: Canada Mortgage and Housing Corporation, 2000. (External Research Program) 121 pages.

AVAILABILITY : Canadian Housing Information Centre

TOGETHER INDEPENDENTLY: A HOUSING CONCEPT TO AID THE COMMUNITY INTEGRATION OF SENIORS AND DISABLED ADULTS = ENSEMBLE MAIS AUTONOMES : UN CONCEPT DE LOGEMENT QUI FAVORISE L'INTÉGRATION DES AÎNÉS ET DES ADULTES HANDICAPÉS DANS LA COLLECTIVITÉ

In Shediac, N.B., Alphonse LeGresley conceived and built a unique house that addressed a genuine Canadian housing need. Unfortunately, the Moncton area civil engineer could not persuade anyone to live in his house. Mr. LeGresley's concept, called "Together Independently", was a duplex-style dwelling in which the occupants of each half shared certain facilities but would otherwise live as if they occupied self-contained units. They would share a kitchen with two fridges, the metered electrical system, the water and sewer systems, the heating system, and could share a central vacuum system.

The clientele for whom he designed the house were seniors and disabled adults, able to live independently with someone nearby they could call on if they took sick or needed help with chores such as housework or shopping. Basically, his house would be occupied by a primary tenant/owner and another tenant willing to act as a companion and helper to the primary occupant. They would share certain living costs, making this an economical arrangement for both.

The project proceeded in three distinct phases. Mr. LeGresley explained his concept to groups representing seniors and the disabled, got their input and adjusted his design to accommodate needs. He explained his plan to municipal officials and obtained the single dwelling designation he sought because it was key to the project's economic viability. Then he secured financing and built the house.

He held an open house that attracted considerable local media attention to the model. He advertised the house and promoted it directly to organizations interested in the needs of seniors and disabled persons. There was interest, but no one wanted to buy or rent the house. In late 1998, he decided to cut his losses and convert the dwelling to a true duplex. In early 1999, the make over was done and the two units were available for rent.

This report describes Mr. LeGresley's concept and suggests reasons why it did not succeed. Left unanswered is the question, "Would it work elsewhere or under different circumstances?"

Case study written by: Word-Works Communications Services. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 1999 c.2001. (Affordability and Choice Today ACT Regulatory Reform Project; ACT Case Study) 37 pages

AVAILABILITY : CMHC Information Products Order number: 62228

SOCIAL HOUSING

UNDERSTANDING THE ROLE OF MIXED INCOME HOUSING: AN EXAMINATION OF THE HOUSING SITUATION OF MARKET TENANTS LIVING IN SOCIAL HOUSING COMPARED TO MARKET TENANTS LIVING IN PRIVATE RENTAL HOUSING

This study looked at similarities and differences between market tenants living in social housing and market tenants living in private rental housing in Greater Vancouver in order to develop a better understanding of the benefit of having market units in social housing. The study also sought to better understand the housing challenges that families and individuals face in finding housing that meets their needs and that is affordable.

The study findings suggest that access to mixed income housing has helped to provide a certain degree of housing stability to family households with low to moderate incomes and has helped to respond to the specific housing needs of single parent families. With tight rental housing markets in many communities, the lack of new rental housing construction, and the increasing residualization of renter households, it is clear that this housing plays an important role in Canada's housing programs. It is also clear that many tenant households with low to moderate incomes would have fewer and less affordable housing options without this housing.

Prepared by Jason and Lorraine Copas, Community Focus, Vancouver, B.C. CMHC Project Officer: William Lortie. Ottawa: Canada Mortgage and Housing Corporation, 2001. (External Research Program Report)

AVAILABILITY : Canadian Housing Information Centre

SUSTAINABLE DEVELOPMENT & HEALTHY HOUSING

ARDENCRAIG: DOCUMENTATION OF AN URBAN INFILL AND REMODEL PROJECT WITH SUSTAINABILITY FEATURES

Ardencraig is a heritage-style redevelopment project, that was completed in September 2000 by Chesterman Property Group Inc. in Vancouver. Chesterman converted an existing single family residence built in 1910 into four strata-titled townhouse units; three in the converted home and a new coach house in-fill residence on the rear yard. The property is located at 355 West 11th Avenue in the City Hall area of Vancouver.

The vision was to identify and prioritize a wide range of resource conservation, energy conservation and healthy building measures for inclusion in the project. These are design and construction methods that will minimize the impact of the project on the environment, and are generally referred to as "green building" or "sustainable building" approaches. The project is a market experiment and an example of producing high-quality housing through remodeling and infill (adding floor space to an existing property) in an environmentally sustainable way.

This report describes the story of Ardencraig from concept to completion, and details many of the specific decisions made about sustainability features. It also reports on a small market survey done during the marketing and post sales stages of the project.

Prepared by Urban Ecology Design Collaborative; Chesterman Property Group Inc.; and Wave Design + Media Inc. CMHC Project Officer: Brian Eames. Ottawa: Canada Mortgage and Housing Corporation, 2001. (External Research Program Report) 61 pages.

AVAILABILITY : Canadian Housing Information Centre

CONSTRUCTION RESOURCE MANAGEMENT COURSE - PHASE II

A private and public sector consortium was established to develop a methodology for assisting industry to better understand, control and reduce the levels of construction, renovation and demolition (CRD) waste. The partners included; Department of National Defense, Industry Canada, Canada Mortgage and Housing Corporation, Alberta Environmental Protection, NWT Department of Resources, and PCL Constructors Canada Inc. Phase I was the development of a CRD training course in hard copy. The course provides practical and comprehensive information on resource management issues in the Canadian CRD industry. It is intended for project managers which include, but are not limited to: engineers, architects and CRD contractors. Phase II consisted of the development of an Internet based CRD project management course that would: provide current resource management information and case-specific solutions; contribute to the development of standard managerial practice; promote widespread communication of the best resource recovery techniques, contribute to economic growth and job creation; promote long-term behavioural change; and help industry associations and government departments meet mandated environmental targets.

AVAILABILITY : To obtain more information on the CRD Course please contact Vince Catalli at byDesign Consultants (613) 759-4605 or at www.bydesignconsultants.com

ECOPERTH: A SMALL RURAL COMMUNITY TAKES ACTION ON CLIMATE CHANGE

By communicating the experience of Perth, Ontario, this project shows how a small rural town can respond to the issues of climate change. The planning and implementation of many initiatives of EcoPerth, a community-based project, are described. The initiatives fall into four categories: The Green Team (planting trees, naturalizing the land and promoting local food), the Building Team (use less energy at home, work and play), the Transportation Team (finding innovative ways to simply get around) and the Communication Team (Getting the word out and moving from awareness to action).

Ottawa: Canada Mortgage and Housing Corporation, Research Division, 2001. (Research Highlights. Socio-economic Series; no. 82) 5 pages

Publié aussi en français sous le titre : EcoPerth : une petite collectivité rurale réagit contre le changement climatique

AVAILABILITY : Product is available on the web *Order number: 60975*

HEADWATERS PROJECT -EAST CLAYTON NEIGHBOURHOOD CONCEPT PLAN. SOCIO-ECONOMIC RESEARCH HIGHLIGHT; NO. 78

The Headwaters project is a demonstration of sustainable development principles and performance standards in the community of East Clayton, Surrey, BC. Its purpose is to provide a replicable model that can be used to develop more sustainable communities throughout British Columbia's Lower Mainland Region and potentially beyond. This Research Highlight describes the Neighbourhood Concept Plan (NCP) and the planning process. It also examines some anticipated environmental and economic benefits of the NCP, including greenhouse gases from urban travel, impacts on local streams and hydrology, and infrastructure, land and building costs.

Ottawa: Canada Mortgage and Housing Corporation, 2001. 8 pages

NOTE: Aussi disponible en français sous le titre : Projet Headwaters - plan conceptuel du quartier d'East Clayton. Le Point en recherche; série socio-économique; no. 78

AVAILABILITY : Product is available on the web *Order number: 61170*

IMPLEMENTING SUSTAINABLE COMMUNITY DEVELOPMENT: CHARTING A FEDERAL ROLE FOR THE 21ST CENTURY

This research was undertaken to accelerate the implementation of sustainable communities in Canada and was designed to answer the following key questions:

- What are the essential features of sustainable community development?
- Why is sustainable community development so important to the future economic, social and environmental health and well being of Canadians?
- What is the current status of sustainable community development in the US, Europe, Australia, New Zealand and Canada, and more importantly, what are federal governments doing to support these innovative developments?
- What are the primary barriers to sustainable community development in Canada?
- What types of policy and program measures could the federal government implement in partnership with municipal governments and others to effectively stimulate the implementation of sustainable communities in Canada?

This report is written primarily for federal policy makers who are interested in promoting sustainable development and reducing greenhouse gases at the community level. However, it also provides resources for other practitioners - innovative developers, development consultants, planners and municipal, regional and provincial policy makers - who are also interested in implementing sustainable communities.

Information on "good practices", examples of the major features of sustainable communities and possible questions for assessing development proposals are provided. Five detailed case studies on successful and unsuccessful sustainable communities and included lessons learned with practical advice on marketing and financing are provided. Pictures and graphics illustrating the major features of sustainable communities are used throughout the report.

Prepared by P & A Peck & Associates. Written by Steven Peck, Ray Tomalty, Anna Hercz and Guy Dauncey. Prepared for Canada Mortgage and Housing Corporation and Natural Resources Canada. CMHC Project Officer: Doug Pollard. Ottawa: Canada Mortgage and Housing Corporation, 2000.

AVAILABILITY : Canadian Housing Information Centre

MULTIPLE HOUSING FOR COMMUNITY SUSTAINABILITY

To design and build sustainable communities, professionals in the housing industry need to be familiar with the features of sustainability and their potential appeal to the consumer. This report focuses on the factors that make medium density housing sustainable and appealing to certain segments of the market. It provides a detailed account of consumer requirements for medium density housing and gives examples, both existing and new, of how these can be satisfied. It describes clearly which households are likely to choose medium density forms and how to appeal to them with specific features and marketing tactics. A wealth of illustrations make these features clear and connects them to expressed consumer expectations.

This study will become a valuable reference of ideas for developers or planners that seek to intensify land use in cities. The rich material in the report enables developers and municipalities to base the case for medium density housing firmly in consumer preferences and market demand. It gives the ground rules for satisfying consumer expectations and a range of models with which to do it. It promotes greater acceptance of medium density housing and that enables communities to become more sustainable.

Prepared by Quadrangle Architects Limited, Urban Research Associates, Alen Kani Associates, David Redmond and Associates. Prepared for Research Division, Canada Mortgage and Housing Corporation and Natural Resources Canada, Regional Municipality of Ottawa-Carleton. CMHC Project Officer: Fanis Grammenos. Ottawa: CMHC, c2000. (Housing Affordability and Finance Series Research Report) iv, 53 pages

Order number: 62148

NOTE : Aussi disponible en français sous le titre : Logement collectif et la collectivité durable

AVAILABILITY : CMHC Information Products

PRACTICES FOR SUSTAINABLE COMMUNITIES

"Practices for Sustainable Communities" presents:

- A framework to identify and organize the practices — the tools, strategies and activities -- that lead to greater sustainability; and
- Examples of sustainable community development practices.

This book makes the idea of sustainable development a practical reality. It is a Canadian view of the challenges of sustainability, with made in Canada case studies and solutions.

Included with the publication is SCIP, the Sustainable Community Indicators Program, developed by CMHC and Environment Canada. SCIP helps communities measure their progress in building and living sustainably. Communities can create a locale vision of sustainability and measure and monitor their progress in making that vision a reality.

Ottawa: Canada Mortgage and Housing Corporation, 2000. 176 pages

*Order number: 62160 **Price: $59.95 + GST and handling charges.*

NOTE : Aussi disponible en français sous le titre : Pratiques pour des collectivités durables

AVAILABILITY : CMHC Information Products

RESIDENTIAL GREENWAYS IN TRANSITION: FOUR DECADES OF EXPERIENCE IN WATERLOO

This research describes Waterloo's Beechwood greenway system during its four decades of change in conjunction with municipal policies for urban residential development. It examines the types of greenway issues and conflicts that have occurred and reviews means for resolving them. It documents and assesses major stakeholders' satisfaction with greenway planning objectives and outcomes. Finally, it assesses the current and potential contributions of greenways in achieving measures of urban sustainability.

This report makes Waterloo's experience available to other municipalities wanting to initiate greenway programs or wanting to improve the role of existing greenway programs within the planning mandate.

Prepared by Larry R.G. Martin. Prepared for Canada Mortgage and Housing Corporation. CMHC Project Officer: Susan Fisher. Ottawa: CMHC, 2001. (External Research Program Report) 57 pages

AVAILABILITY : Canadian Housing Information Centre

SUSTAINABLE COMMUNITY PLANNING AND DEVELOPMENT: DESIGN CHARRETTE PLANNING GUIDE: FINAL REPORT

Design charrettes are becoming increasingly popular as a way to bring a range of expertise and interests together to collaborate on creating innovative design solutions and embody multiple objectives and mutual interests. They give visual form to ideas and policies and can be used to test and refine planning and development policies and directions. Overall, they are a means to obtain the most creative proposals for addressing the most difficult problems in the least amount of time.

This manual is intended as a guide for those who would like to host or otherwise initiate a design charrette process for sustainable community planning. It is directed particularly at the urban planning context but has application to other planning contexts as well.

The opening chapter begins with an introduction to the concepts and elements of sustainable development and 'sustainable community', and the role of design. Design charrettes and charrette-like events are then explored in more detail in terms of their purposes, usefulness and contribution to policy development and community planning. The chapter is intended to provide foundational information regarding sustainability planning, and guidance for deciding how a design charrette can be useful in your local community.

The next chapter outlines key issues and steps involved in confirming a 'go ahead' for hosting or otherwise becoming involved with a charrette. This section examines the decision-making context, allies and resources, ways of building support and promoting the plan, and getting formal approvals. "Readiness Assessments" help you determine whether or not you are ready to proceed and what to do next in accordance with your answers.

Chapter 3, Pre-Charrette Planning: Roll up Your Sleeves, is focused on the host of tasks to be completed in advance of a charrette. It includes sections on the stakeholder community and communications; consultants and facilitators; advance meetings and options; design issues including detailed discussion on the development of the design brief; design team formation and participant selection; time and timing; venue and facilities; support materials; and additional logistics. Sample schedules, products and lists are provided.

The final chapters focus on the choreography, management and documentation of the charrette itself. Guidance and coaching hints for handling all the products of the charrette along with post-charrette communications and presentations is contained in the final chapter.

Prepared for Ian Smith, Planning Department, City of Vancouver and Douglas Pollard, Research Division, Canada Mortgage and Housing Corporation by Fiona S. Crofton, Principal, ORCAD Consulting Group Inc. Ottawa: CMHC, November 2001. 130 pages

NOTE: No. 103 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : Canadian Housing Information Centre

SUSTAINABLE COMMUNITY PLANNING AND DEVELOPMENT: PARTICIPATION TOOLS & PRACTICES: FINAL REPORT

This manual is intended to help those who are seeking to involve others in sustainable community planning and development move through the various stages of participatory sustainable community planning smoothly and effectively. Principles, tools, methods and guidelines included in the manual are drawn from a wide range of expertise areas and input from experienced practitioners. Following a brief introduction providing reasons for the manual, a description of the intended audience, an overview of contents and guidance for use, the manual is presented in four main sections.

The first section, "Initiation", focuses on participation in the sustainable community planning context and includes special attention to key participation principles, levels of participation, and the issues and benefits of multi-stakeholder participation in sustainable community planning.

The second section, "Preparation", outlines in detail ten important steps for effective planning, implementation and follow-up. A series of tear-out tips and checklists for this section are provided in an appendix.

Section III, "Participation", presents essential tools and a 'toolkit' for participation in sustainable community planning. The toolkit includes short sheets outlining five general types of participation activity; a toolbox of more than 150 individual tools and methods useful for various activities; and a series of scenario maps which illustrate the ways various tools can be sequenced and how stakeholders can be involved throughout a particular planning process. Tool examples and resources for this section are included in the appendices.

The final wrap-up section of the manual, "Continuation", addresses ways for ensuring ongoing participation in planning, and speaks to the changing roles of planners and citizens in the process.

In sum, the aims of this book are:

- To provide users with a framework for developing an understanding of participation processes and issues; guidance for planning effective and continuous participatory sustainable community planning programs; and tools for undertaking such programs;
- To help shift community planning from one where planners say, "We'll figure it out and do it for you" to one where it is agreed that "We'll work and learn together" to find creative solutions and achieve mutually beneficial outcomes.

Prepared by Fiona S. Crofton, Principal, ORCAD Consulting Group Inc. CMHC Project Officer: Doug Pollard, Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 2001.

AVAILABILITY : Canadian Housing Information Centre

SUSTAINABLE INTEGRATION OF INFRASTRUCTURE AND BUILDINGS: A FOLLOW-UP WORKSHOP TO THE SUSTAINABLE BUILDINGS 2000 CONFERENCE

This project's objective was to conduct and report upon a workshop entitled 'Sustainable Integration of Infrastructure and Buildings in Maastricht, The Netherlands. The project developed a report which includes the proceedings of a two day discussion and design exercise where European and Canadian experts explore the potential of green buildings to perform as community infrastructure. The report also includes a brief analysis of where Canadian design expertise in this field might find a market niche in European design markets.

Proceedings prepared by Sebastian Moffatt, The Sheltair Group. Ottawa: Canada Mortgage and Housing Corporation, 2002. 62 pages

AVAILABILITY : Canadian Housing Information Centre

THEORY TO PRACTICE: LESSONS LEARNED FROM THE USE OF PERFORMANCE ASSESSMENT MEASURES TO IMPLEMENT SUSTAINABLE COMMUNITIES: FINAL REPORT

This report provides a review of the lessons learned from practitioners engaged in the development and use of performance assessment measures (PAMs) for sustainable community development through the development of case studies. A PAM involves the use of an indicator and target for achieving a certain desired future state of affairs with respect to promoting the features of sustainable community development. The process of developing and utilizing PAMs is fundamentally important in moving from broad sustainable community visions, goals and objectives to the implementation of specific measures that yield progress. PAMs are a tool for operationalizing sustainable development in a manner that reflects local circumstances. PAMs are used for a wide variety of purposes including public education, internal program and policy review and development, staff and political communications, and relations with the development community to name a few. The establishment of PAMs within an overall sustainable community development and reporting process can be challenging and the report points to a number of methods of establishing an effective program.

Prepared by Steven W. Peck and Ray Tomalty. CMHC Project Officer: Doug Pollard. Ottawa: Canada Mortgage and Housing Corporation, 2002. (External Research Program Research Report) ca. 80 pages

AVAILABILITY : Canadian Housing Information Centre

TRANSFORMING YOUR PRACTICE: INTEGRATED DESIGN CHARRETTES FOR SUSTAINABLE BUILDINGS: TORONTO CHARRETTE RESULTS

This charrette took place in Toronto, at the City of Toronto's Metro Hall, November 7th and 8th, 2001. The objective of the Toronto Charrette event was to use the integrated design process (IDP) to push the boundaries of building performance towards more sustainable practices. the sessions were intended to take a varied complement of professionals through an integrated design process in the context of a new project, so that they would "learn by doing" and be able to use IDP within their own practice.

Four partners supported Canada Mortgage and Housing Corporation in this event:
-- Enbridge Consumers Gas,
-- City of Toronto's Better Buildings Partnership,
-- Natural Resources Canada's Office of Energy Efficiency, and the
-- Canadian Energy Efficiency Alliance.

The goals of the partners were to:
-- Establish a forum where a multi-disciplinary group of design professionals could work together on a sustainable design project,
-- Gain insights into sustainable building practices, and
-- Learn how to advance building performance, starting from design conception to understanding of operations issues, building on each others' unique perspectives and expertise.

This document discusses the integrated design process and reports on the results of the charrette.

Prepared by IndEco Strategic Consulting Inc. Prepared for Canada Mortgage and Housing Corporation. CMHC Project Officer: Sandra Marshall. Toronto: IndEco Strategic Consulting Inc., 2002. 96 pages

AVAILABILITY : On a loan basis from: Canadian Housing Information Centre

SUSTAINABLE DEVELOPMENT & HEALTHY HOUSING

YOUR NEXT MOVE: CHOOSING A NEIGHBOURHOOD WITH SUSTAINABLE FEATURES

If you are considering a move, this guide will help you identify neighbourhood features that benefit you and the environment. You will learn about the features, like close access to shopping and jobs as well as see examples from real neighbourhoods across Canada. When searching for your next home, use the checklist to compare neighbourhoods.

Ottawa: Canada Mortgage and Housing Corporation, 2001. 8 pages Order Number: 62180

Note: Aussi disponible en français sous le title : Lors de votre prochain déménagement : choisissez un quartier comportant des caractéristiques durables

AVAILABILITY : CMHC Information Products Note: Also available on the Internet: http://www.cmhc-schl.gc.ca/en/bureho/buho/buho_003.cfm

URBAN TRANSPORTATION

GREENHOUSE GAS EMISSIONS FROM URBAN TRAVEL: TOOL FOR EVALUATING NEIGHBOURHOOD SUSTAINABILITY

The purpose of this study is to develop a tool that calculates greenhouse gas (GHG) emissions from personal urban transportation (i.e. cars and public transit) given variations in neighbourhood planning and design variables such as density and land use mix, as well as demographic and locational variables. The Research Report includes a software tool that can be used to evaluate neighbourhood development proposals for GHG emissions from urban travel. In the study, the software is used to compare the GHGs from urban travel of nine neighbourhood scenarios, each with different design features and locational variables.

The results of the evaluation of the nine neighbourhood scenarios using the model developed in this study suggest that the "macro" urban structure is more important than the "micro" neighbourhood design in reducing GHG emissions from auto and transit travel by neighbourhood residents. That is, infill development is more effective than greenfield development in moderating the growth of GHG emissions, even if the new greenfield neighbourhood is neo-traditional rather than typical suburban in design. However, neighbourhood design is also a significant determinant of GHG emissions and can go a long way in improving the sustainability of neighbourhoods in the outer regions of urban areas.

The spreadsheet tool produced by this study provides a useful instrument for planners and developers in comparing the GHG emissions of different neighbourhood scenarios. It enables them to compare the implications of both local neighourhood design and the broader-scale urban structure considerations of infill versus greenfield development.

Prepared by IBI Group for Canada Mortgage and Housing Corporation and Natural Resources Canada. CMHC Project Officer: Susan Fisher. Ottawa: CMHC, 2000. (Healthy Housing and Communities Series) ix, 60 pages.

NOTE 1: Aussi disponible en français sous le titre : Émissions de gaz à effet de serre attribuables aux déplacements urbains

NOTE 2: No. 50 in the Research Highlights Socio-economic Series summarizes the results of this research and is available on the CMHC web site.

AVAILABILITY : CMHC Information Products *Order Number: 62142*

REGIONAL ROAD CORRIDOR DESIGN GUIDELINES. SOCIO-ECONOMIC RESEARCH HIGHLIGHT; NO. 52

This document addresses the function and design of regional arterial roads and adjacent lands in the urban areas and villages of the former Region of Ottawa-Carleton (now the City of Ottawa). It provides design guidelines that integrate traditional objectives like safety and efficiency of vehicular movement with safe, pleasant and convenient movement of pedestrians, cyclists, and transit users. The document crosses traditional boundaries between land use and transportation planning by including the road right-of-way (ROW) and its interface with adjacent land uses, right up to building facades. While the guidelines were developed specifically by the former Region of Ottawa-Carleton, they could also apply to similar municipalities across Canada.

Ottawa: Canada Mortgage and Housing Corporation, 2001. 6 pages

NOTE : Aussi disponible en français sous le titre : Lignes directrices en matière de conception des corridors de routes régionales. Point en recherche : série socio-économique; no. 52

AVAILABILITY : Canadian Housing Information Centre and available on the Internet at: http://www.cmhc-schl.gc.ca/publications/en/rh-pr/main_en.html

WATER CONSERVATION, REUSE & MANAGEMENT

BUYING A TOILET. ABOUT YOUR HOUSE; CE 39

This 4 page fact sheet is aimed at consumers and provides information and advice on buying a toilet. It covers where toilets can be purchased, the average cost, outlines the differences between 6 litre and 13 litre toilets, touches on legislation, warranties, and rebates, and discusses important factors to consider in the purchase of tanks, flappers, fill valves, and toilet bowls. The fact sheet advocates the use of 6 litre toilet models to help lower water bills, reduce strains on water supply and waste-water collection infrastructure, and improve the environment.

Ottawa: Canada Mortgage and Housing Corporation, 2002. 4 pages

Order number: 62935

NOTE : Aussi disponible en français sous le titre : L'Achat de toilettes

AVAILABILITY : CMHC Information Products and available on CMHC's web site

DOMESTIC COLD WATER BOOSTER PUMP CONTROL MONITORING PILOT PROGRAM = LE PROGRAMME PILOTE DE CONTRÔLE POUR POMPE RELAIS À EAU FROIDE DOMESTIQUE

This pilot study, in partnership with the City of Toronto, Minto, and CMHC assessed the performance of two different booster pump control systems in 7 multi-unit residential buildings. Booster pump performance was measured in terms of electrical energy and water savings. The study assessed the impact of booster pump savings on buildings retrofitted with water efficient fixtures to ensure that only the technology application is measured without the influence of other concurrent changes. By utilizing 7 buildings with different characteristics, (size, # units, occupancy type), the work also attempted to define what type of building profile will most benefit from utilizing this control system. The final report findings indicate that greatest impact is felt with respect to energy savings. Water savings are best achieved through a leak detection and appliance retrofit program.

Prepared by Alain Lalonde, Veritec Consulting Inc. and Andrew Pride, Minto Energy Management. Prepared for Minto Developments Inc., in cooperation with City of Toronto and Canada Mortgage and Housing Corporation. CMHC Project Officers: Cate Soroczan and Sandra Baynes. Ottawa: CMHC, 2001. 1 CD-ROM

NOTE: No. 01-118 in the Research Highlights Technical Series summarizes the results of this research and is available on the CMHC web site

AVAILABILITY : Canadian Housing Information Centre

ECONOMIC FEASIBILITY STUDY OF WATER REUSE AND TREATMENT TECHNOLOGIES

The purpose of this project is to undertake and complete an economic feasibility study of water reuse and treatment technologies. The contractor will assess ten case studies of on-site water reuse applications. The final draft has been received and the case studies will be uploaded to the CMHC water website on a monthly basis. Further attention is being paid to the financial aspects of water reuse and full costing.

AVAILABILITY : Product is available on the web

ON-SITE STORMWATER MANAGEMENT ALTERNATIVES

This project's objective was to provide case studies of on-site stormwater management alternatives. These case studies are available on the CMHC water website in case study form.

AVAILABILITY : Product is available on the web

PERFORMANCE ASSESSMENT OF LOW-FLOW TOILETS

This project's objective is to set up and conduct a monitoring program to verify the flush volumes of 6-L Ultra Low-Flow (ULF) toilets installed in single-family homes as part of Durham's retrofit program. Results indicate that depending on the brand of toilet installed there is a mixed reaction to ultra low-flow technology.

AVAILABILITY : Product is available on the web

YOUR SEPTIC SYSTEM. ABOUT YOUR HOUSE; CE34

This six page fact sheet, designed for the consumer, describes how a septic system works and what to do to keep a septic system well maintained and functioning properly. It covers how to know if a problem with a septic system exists by listing some of the warning signs of a failing system, and then outlines actions required to repair it. In addition, the fact sheet describes available alternatives to septic systems.

Ottawa: Canada Mortgage and Housing Corporation, 2001. (About Your House; CE 34) 6 pages

NOTE : Aussi disponible en français sous le titre : Votre installation d'assainissement. Votre maison; CF34

AVAILABILITY : CMHC Information Products and available on CMHC's Web site. To download this document visit CMHC's Web site at:http://www.cmhc-schl.gc.ca/en/burema/gesein/abhose/index.cfm

HOUSING OPTIONS FOR WOMEN LIVING ALONE IN RURAL AREAS: FINAL REPORT

Over the years, there has been an increased awareness that female-led households have different housing needs than those of the traditional nuclear family. However, most studies have concentrated on urban areas and there is very little literature available on the housing requirements of women living rurally. This project's objectives are: to identify the unique housing requirements of women living alone in rural areas, the housing options that would meet these requirements, changes required to planning practices and land use regulations that would allow the housing sector to respond to the unique housing requirements of women living alone while respecting the density issues, environmental issues and other factors essential for the preservation of the rural character of life.

Drawing on a case study of fifty women living in the Boundary District of British Columbia, the report suggests that the existing housing supply does not meet the needs of women living alone. The main issues identified are: affordablility problems due to low incomes; a limited numbers of housing choices (basically single dwellings on large acreages); and issues around home and property maintenance.

The majority of women wanted to see more housing options in rural areas than the typical single dwelling on a large acreage. While most women preferred to live in their own private dwelling, they were interested in sharing land or adding a second dwelling on their property to provide additional income or for physical help with farm or rural chores. Zoning by-laws in most rural areas in the Boundary prohibit these housing options as housing density is limited to one dwelling per lot, even in areas where the minimum lot size is twenty-five acres. If women living alone are going to have their housing needs fully met in rural areas. land use regulations must allow a greater range of options to emerge.

Prepared by Margaret Steele. Ottawa: Canada Mortgage and Housing Corporation, 2002. (External Research Program Research Report) 55 pages

AVAILABILITY : Canadian Housing Information Centre

YOUTH AND HOUSING

HOW TALOYOAK, NUNAVUT TERRITORY CREATED AFFORDABLE HOUSING FOR YOUTH THROUGH FUNDING PARTNERSHIPS AND THE LESSONS LEARNED = COMMENT TALOYOAK, DANS LE TERRITOIRE DU NUNAVUT, A PRODUIT DES LOGEMENTS ABORDABLES POUR LES JEUNES GRÂCE À DES PARTENARIATS DE FINANCEMENT, ET LES LEÇONS QUE LA COLLECTIVITÉ A TIRÉES DE SON EXPÉRIENCE

Unlike most parts of Canada, where housing an aging population is a pressing public issue, the civic administration of the Spence Bay Hamlet of Taloyoak, Nunavut Territory, is concerned with the housing needs of youth. In 1996, 42 per cent of the population was aged 14 and under, compared to 13 per cent aged 45 and over. A lack of suitable housing for young adults forces many working youth to live with their parents or grandparents in overcrowded conditions.

To meet the housing needs of youth, the municipality built a 12-unit housing project on land its development corporation leased from the municipality. The project can serve as a model which other northern communities facing similar problems could emulate. The $7,000 awarded to the Hamlet under the A.C.T. program helped document and promote the project for the benefit of other northern communities. This A.C.T. report is particularly instructive in its description of the funding sources Taloyoak tapped to pay for it all and the various difficulties encountered along the way.

Case study written by Louis Primeau, Hamlet of Taloyoak, Nunavut Territory. Edited by Word-Works Communications Services. Prepared for: Federation of Canadian Municipalities; Canadian Home Builders' Association; Canadian Housing and Renewal Association; Canada Mortgage and Housing Corporation. Ottawa: FCM; CHBA; CHRA; CMHC, 2001. (Affordability and Choice Today ACT Case Study) 28 pages

Order number: 62328

AVAILABILITY : CMHC Information Products

LOGEMENT INNOVATEUR POUR JEUNES PERSONNES SANS ABRI : RAPPORT FINAL

This research is aimed at identifying innovative housing projects intended to meet the needs of homeless youth and the factors that make them exemplary projects, based on two main sources of information – a review of the literature and interviews with key people working in this sector.

The needs of homeless youth documented in the literature are extensive and complex. There are often major deficiencies in terms of training and preparation for the job market; emotional and relationship problems frequently result from a difficult life; and surviving as a homeless person may have led to health and substance abuse problems. In addition, it would seem that these youth often have mental health problems.

Recent studies highlight the determining role of housing as a solution to the problems of homelessness. However, while a stable home may be very important, it is clear that, for certain subgroups including youth, support services are necessary. An analysis of effective models for youth reveals the following elements: a safe and affordable home, constant emotional support, a relationship with at least one responsible and trustworthy adult, the opportunity to develop life skills leading to autonomy, and access to services such as training, education, an employment readiness course, and health care including mental health. The studies also show the need for social ties. Participation and control issues were often raised. Examples of projects that encourage participation in project design were collected.

Prepared by Luba Serge. Ottawa: Canada Mortgage and Housing Corporation, 2002. (CMHC External Research Program Report) 57 pages

AVAILABILITY : Canadian Housing Information Centre

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